

DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)

Doctorate in Clinical Psychology: Main Research Portfolio

1) Divergent Thinking and ADHD: A Systematic Review; 2) Video Information and Expectations of therapeutic Work (VIEW): Development and evaluation of an information video about psychological therapy; 3) Social anxiety among adults with ADHD: A result of cognitive bias?

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ABSTRACTS

Critical Review of the Literature

Divergent Thinking and ADHD: A Systematic Review

Objective: ADHD may be associated with enhanced divergent thinking (DT); however, the extent to which this is a consistent finding across empirical studies is unclear. Accordingly, this paper reviews the association between ADHD and DT.

Method: A systematic review of case/control studies was completed. There were 179 records identified, of which 10 met inclusion criteria for this review.

Results: The majority of studies were of low-to-moderate quality and it was therefore not possible to meta-analyse the results across studies. A narrative review indicated only modest case/control differences in DT and for only some DT domains, specifically for Originality and Flexibility.

Conclusions: Overall, these findings indicate that DT is not impaired among individuals with ADHD and is possibly enhanced in the domains of Originality and Flexibility; however these findings are limited by the low quality of included studies. High quality research into ADHD and DT is therefore required in future.

Service Improvement Project

Video Information and Expectations of therapeutic Work (VIEW): Development and evaluation of an information video about psychological therapy

Background: Psychological therapists have a clinical duty to provide patients with information prior to completing an initial assessment or therapy appointment. This is important not only for the process of informed consent, but also since accurate knowledge and expectations about therapy have been linked to higher rates of therapy attendance. The Video Information and Expectations of therapeutic Work (VIEW) project is a Service Improvement Project, in which an information video about psychological therapy was developed and evaluated in a collaborative venture between a University and the staff and patients of an NHS Community Mental Health Team.

Methods: The VIEW project followed a Plan, Do, Study, Act (PDSA) model of service improvement and moved through four distinct phases: Phase 1 was stakeholder consultation to determine video content; Phase 2 was development of the video; Phase 3 was piloting the video to determine whether it improved patient knowledge/expectations for therapy and whether it was associated with greater rates of therapy attendance; Phase 4 was analysis of the data.

Results: A video was developed in Phases 1-2. During phase 3 only five individuals provided feedback on the video and due to missing data it was not possible to analyse these results. An audit identified no significant difference in rates of therapy attendance between the five individuals who viewed the video vs. five individuals who had not; however these results are limited by the small sample size.

Conclusions: The successful development and rollout of an information video about psychological therapy is an example of service improvement in practice. Further work is now required to evaluate the effectiveness of the video.

Main Research Project

Social anxiety among adults with ADHD: A result of cognitive bias?

Background: Around 30% of adults with attention-deficit/hyperactivity disorder (ADHD) also experience clinical levels of social anxiety, yet no studies have sought to fully understand the extent to which a cognitive model of social anxiety can be applied in this population.

Aims: This study aimed to test the cognitive theory of social anxiety in ADHD.

Methods: An online questionnaire was used to examine social anxiety cognitions, safety-seeking behaviours, wellbeing and impairment among 86 adults: 23 adults with ADHD who scored high for social anxiety (ADHD+SA), 5 adults with ADHD who scored low for social anxiety (ADHD-SA), 36 adults without ADHD who scored high for social anxiety (Control+SA), 22 adults without ADHD who scored low for social anxiety (Control-SA). The ADHD-SA group was excluded from some analyses due to the small sample size.

Results: The ADHD+SA group scored significantly higher than both comparison groups for frequency of negative cognitions about social situations, belief in negative cognitions about social situations, use of safety-seeking behaviours in social situations and functional impairment. However, there was no difference in wellbeing between the ADHD+SA and Control+SA groups, suggesting that social anxiety is a more prominent determinant of wellbeing than is ADHD. Within the entire sample (N=86), regression analyses additionally indicated an association of inattentive ADHD symptoms with the frequency of social anxiety cognitions but not with use of safety-seeking behaviours.

Conclusions: Overall, these results suggest that a cognitive model of social anxiety can be applied when working with adults with ADHD who also experience social anxiety.

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You are the salvation of this shipwreck,
The land on which my journey ends.

CHAPTER 1: CRITICAL REVIEW OF THE LITERATURE

Project title:

Divergent Thinking and ADHD: A Systematic Review

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1.1 ABSTRACT

Objective: ADHD may be associated with enhanced divergent thinking (DT); however, the extent to which this is a consistent finding across empirical studies is unclear. Accordingly, this paper reviews the association between ADHD and DT.

Method: A systematic review of case/control studies was completed. There were 179 records identified, of which 10 met inclusion criteria for this review.

Results: The majority of studies were of low-to-moderate quality and it was therefore not possible to meta-analyse the results across studies. A narrative review indicated only modest case/control differences in DT and for only some DT domains, specifically for Originality and Flexibility.

Conclusions: Overall, these findings indicate that DT is not impaired among individuals with ADHD and is possibly enhanced in the domains of Originality and Flexibility; however these findings are limited by the low quality of included studies. High quality research into ADHD and DT is therefore required in future.

Key words: ADHD; Divergent Thinking; Creativity; Systematic Review.

1.2 INTRODUCTION

1.2.1 Background

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterised by core symptoms of inattention, hyperactivity and impulsivity. It affects around 3-5% of children, adolescents and adults worldwide (Polanczyk, Willcutt, Salum, Kieling, & Rohde, 2014) and there is little doubt that many of these individuals experience at least one of a range of psychological difficulties (e.g., emotional lability, anxiety, depression) and/or functional impairments (e.g., problems in education or at work, risk-taking behaviours) associated with ADHD (Anastopoulos et al., 2011; Biederman et al., 2006; Busch et al., 2002; Kessler et al., 2006; Skirrow & Asherson, 2013). Yet it is argued that ADHD might also be associated with relative strengths (Hallowell & Corman, 2006) such as enhanced creativity, i.e. the formation of original and useful output (M.A. Runco & Jeager,

2012). This is a positive psychological perspective (Seligman & Csikszentmihalyi, 2000), in which emphasis is placed on the potential benefits associated with ADHD. But is there sufficient evidence to support this position? This paper seeks to address this question by systematically reviewing the association between ADHD and divergent thinking, a construct linked to creativity.

1.2.2 Divergent Thinking

Divergent thinking (DT) is the process of producing multiple, varied ideas that move in different directions and lead to the generation of further, novel ideas (Kozbelt, Beghetto, & Runco, 2010). Put simply, DT is a process of *ideation*, i.e. the generation of thoughts, judgments, evaluations and decisions (Runco, 2010). The concept of DT first emerged from Guilford's Structure of the Intellect Theory (Guilford, 1968), in which DT was identified as a measurable component of creativity. Creativity is a phenomenon resulting in the formation of output that is both original and of high utility (Runco & Jeager, 2012). Creative output can take a form that is either tangible (e.g., objects) or intangible (e.g., ideas). Using this definition, DT can be considered an index of creative potential rather than a direct measure of creativity *per-se* (Runco, 2010), meaning that DT is just one aspect of cognition that is necessary, but not sufficient, in order for creativity to occur (Plucker, 1999). Therefore, DT is associated with, but does not guarantee, real world creative behaviours such as artistic output, scientific excellence or specific talents (Runco & Acar, 2012).

DT has been contrasted with other units of cognition also thought to be necessary for creativity, most notably convergent thinking (CT), a linear thought process used to identify a single, correct solution or answer (Kozbelt et al., 2010). It has been hypothesised that DT and CT may work in concert to facilitate creative output, with DT allowing for the generation of multiple ideas and CT allowing a single idea to be taken forward and acted upon (Cropely, 2006).

DT can be broken down into a number of inter-dependent domains, the main four being Fluency, Flexibility, Originality and Elaboration (Runco, 2010). On tasks of DT, Fluency refers to the total number of ideas generated, Originality to the novelty of ideas, Flexibility to the number of different categories that ideas represent, and Elaboration to the level of detail of ideas. There is some debate

concerning the extent to which these domains represent separate factors, although all four are considered acceptable indices of DT (Runco, 2010).

1.2.3 Theoretical associations between DT and ADHD

The theoretical associations between DT and ADHD can be considered from a biopsychosocial perspective, taking into account the interrelationships between ADHD, DT and a broad repertoire of creative behaviours. Beginning at the psychosocial level, anecdotal evidence suggests that individuals with ADHD may be more creative and more divergent in their thinking styles than those without the disorder, reflected in tangible creative output such as having a specific talent or being successful in a creative profession (Hallowell & Corman, 2006; Pinker, 2008). This is reflected in case studies highlighting a conceptual overlap between ADHD, DT and creativity, particularly among gifted individuals (Baum & Olenchak, 2002; Cramond, 1994; Leroux & Levitt-Perlman, 2000); and in qualitative research, in which children and adults have described creativity and DT as potentially advantageous aspects of their own ADHD (Brinkman et al., 2012; Sedgewick, Merwood, Cooper, Mowlem, & Asherson, in preparation). Research has also revealed associations of ADHD and DT with creative achievement in artistic and scientific domains (White & Shah, 2011). However, one recent, large population study found that adults working in creative professions were no more likely to have ADHD than those working in other fields (Kyaga et al., 2013), while another population study failed to detect significant associations of greater levels of ADHD symptoms with tangible creative behaviours such as domain-specific talents (Greven et al., 2016). These results hint at a *possible* association between ADHD, DT and enhanced creativity, although results are far from conclusive.

Psychosocial research has also studied the relationships of ADHD and DT with personality traits associated with creative behaviour. DT has been found to correlate significantly with the factors 'Extraversion' and 'Openness to Experience' from the Five Factor Model of personality (Batey & Furnham, 2006), as well as with constructs of sensation-seeking and impulsivity (Batey, Chamorro-Premuzic, & Furnham, 2009; Batey & Furnham, 2006). ADHD, by definition, is characterised by impulsive behaviour and is associated with sensation-seeking in the form of elevated Extraversion and Openness to Experience (Martel, Roberts, Gremillion, Von Eye, & Nigg, 2011; Nigg, Goldsmith, & Sachek, 2004), and elevated Novelty

Seeking behaviour (e.g., Cho et al., 2008, Faraone, Kunwar, Adamson, & Biederman, 2009). This highlights a phenomenological overlap between ADHD and DT, although there is some evidence to suggest that personality traits such as novelty seeking may be more strongly associated with ADHD than with DT (Healey & Rucklidge, 2006a).

At the neuropsychological level, DT has been linked to executive functions such as problem-solving, organisational and planning abilities (Wiggins & Bhattacharya, 2014), and has been shown to be positively associated with performance on tasks of working memory and inhibition (Benedek, Jauk, Sommer, Arendasy, & Neubauer, 2014). Conversely, ADHD is consistently associated with executive *dysfunction* across neuropsychological tasks with particular deficits on tests of inhibition (Johnson, Wiersema, & Kuntsi, 2009; Willcutt, Doyle, Nigg, Faraone, & Pennington, 2005). Inattention may better account for a neuropsychological overlap between DT and ADHD: The inattentive component of ADHD is characteristically similar to mind wandering, the occurrence of thoughts that are task-unrelated and independent of external stimuli (Smallwood & Andrews-Hanna, 2013). Experimental studies have identified an association of mind wandering with enhanced performance on creative tasks among the general population (Baird et al., 2012), suggesting that mind wandering may facilitate DT by inhibiting concentration and allowing ideation to occur (Smallwood, Nind, & O'Connor, 2009). However, more recent research indicates that mind wandering may hinder creative output, with higher levels of mind wandering associated with lower levels of Fluency and Originality of ideas and impaired executive functioning, and consistent with a view that controlled attention actually facilitates DT (Hao, Wu, Runco, & Pina, 2015). Thus, there is no definitive neuropsychological overlap between DT and ADHD, merely a potential for association that is not consistent across studies.

Finally, evolutionary theory suggests that ADHD (Bradshaw & Sheppard, 2000; Hartmann, 2003; Wang et al., 2004) and creative behaviours including novelty seeking (Lopez & Snyder, 2011; Miller, 1998; Takeuchi et al., 2011) are adaptive traits that have operated under positive sexual selection during recent human evolution. Similarly, creativity also operates under positive sexual selection: creative behaviours are metabolically expensive and it is argued that they evolved as a means of displaying reproductive fitness (see Gabora and Kaufman, 2010, for

review). If associated with ADHD, DT might therefore have conferred an evolutionary advantage by enhancing creative behaviours and increasing reproductive fitness among individuals with ADHD.

1.2.4 Aims

In summary, existing research has identified the potential for association between ADHD and DT, which may lead to creative behaviours and enhanced creative output. However, the findings across studies are inconsistent and in some cases suggest that ADHD might be associated with impaired DT. Consequently, the main aim of this paper was to systematically review published case/control research into the association between ADHD and DT, to understand whether there is a scientific basis for the suggestion that ADHD might be linked to enhanced DT as an index of creative potential. To meet this aim, the authors intended to conduct a meta-analysis of all high quality studies identified, augmented with a narrative review.

1.3 METHODS

The study aims and proposed methodology were set out *a-priori* in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2015). Specifically, it was the aim of this review to identify as many high quality studies as possible in order to conduct a meta-analysis and narrative review. Were an insufficient number of high quality studies identified, this review aimed to present a narrative synthesis of the data only.

1.3.1 Search strategy

A literature search was conducted by the lead author on 7th October 2015. The following electronic databases were searched: in *all fields* in PubMed (including *MesH* terms), PsychINFO and EMBASE (including *Emtree* search terms), and in *topic* in Web of Science. Results were returned using the following query: ((Publication Year: 1980 to present) AND (("creativity") OR ("divergent thinking"))) AND (("attention deficit hyperactivity disorder") OR ("attention deficit disorder with hyperactivity") OR ("attention" AND "deficit" AND "disorder" AND "hyperactivity"))

OR ("ADHD") OR ("Attention deficit disorder") OR ("hyperkinetic")))). Cited references were also manually searched to identify additional literature.

1.3.2 Study selection

Studies were eligible for inclusion if they compared individuals with and without ADHD using a case/control design, with ADHD diagnostic status confirmed either clinically or by the team conducting the research in accordance with ADHD diagnostic guidelines. The main outcome variable was DT, assessed using a validated psychometric scale. There were no restrictions with regard to the age or gender of participants included in the identified studies; however studies were excluded if they were published in non peer-reviewed journals or if they were published in a language other than English.

1.3.4 Data extraction, synthesis and analysis

The lead author was responsible for extracting data in the following domains: sample characteristics (sample size, gender, age, IQ and medication status), a description of the methods used to diagnose ADHD, and a description of the methods used to assess DT. DT scores were then extracted: this included total DT scores (where available) and scores within the DT domains of Fluency, Originality, Flexibility, Elaboration, Resistance to Premature Closure and Abstractedness of Titles. Data were synthesised by calculating the standardised mean difference (SMD) in DT scores between cases and controls, interpreted according to Cohen (1988) where 0.2 represents a small effect, 0.5 a medium effect and 0.8 a large effect.

1.3.5 Quality Appraisal

An adapted version of the Newcastle-Ottawa Scale (NOS, Wells, Shea, O'Connell *et al*, 2015) was used to assess the quality of all eligible studies. Up to four points were awarded in the domain of Selection, depending on the extent to which case/control status was adequately defined (up to 2 points) and whether case/control samples were drawn from representative populations (up to 2 points). Up to two points were awarded for Comparability: 1 point was awarded if the samples were matched for age; 1 point was awarded if the samples were matched

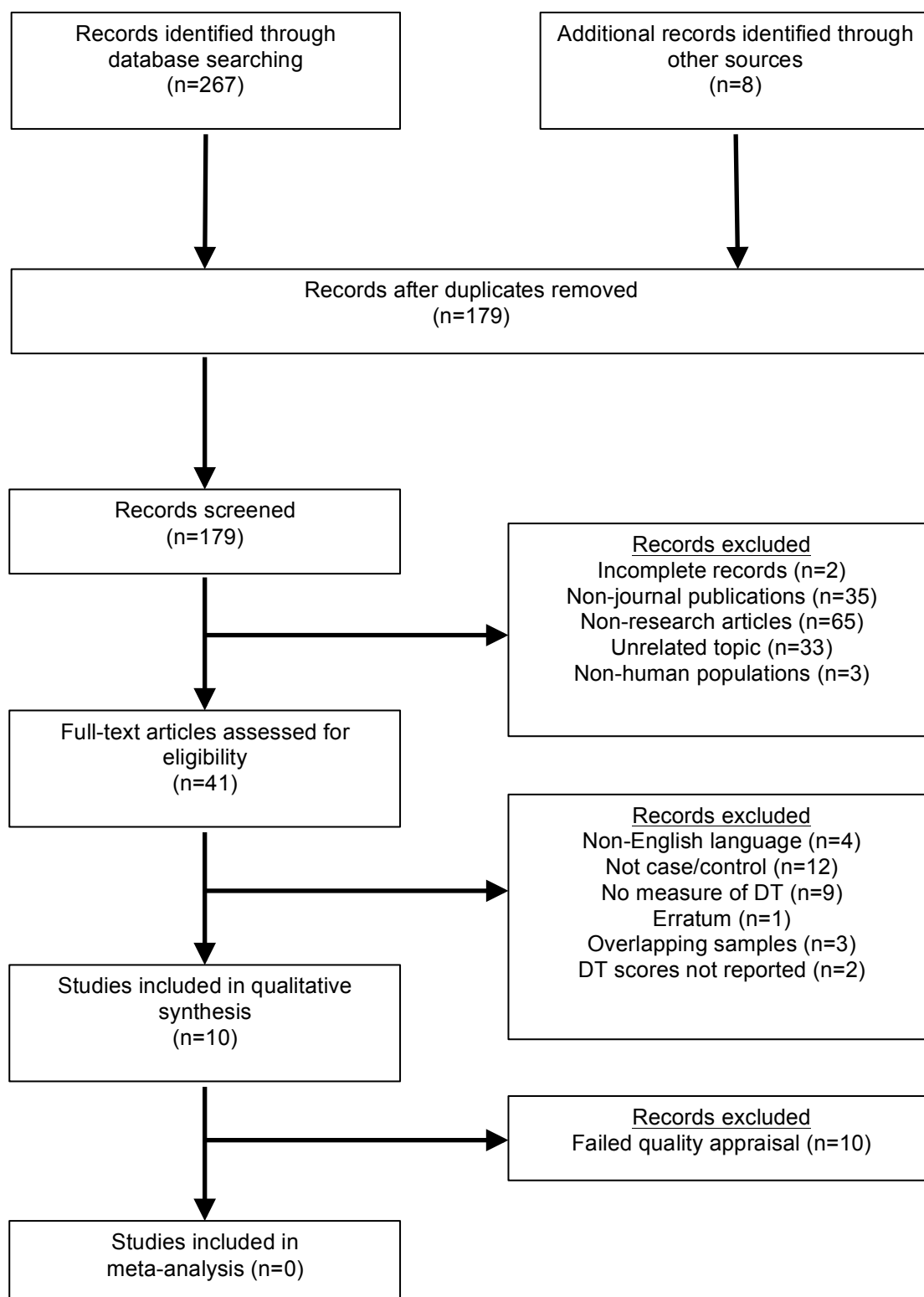
for IQ and medication status (0 points were awarded if samples were only matched for one of these criteria e.g., matched for age but not IQ). Medication status was considered important as there are conflicting results concerning the effects of stimulant and non-stimulant medications prescribed for ADHD on DT (see Discussion), therefore a study could only be awarded maximum points for Comparability if participants with ADHD were off-medication when DT was assessed. Points were not awarded for the domain of Exposure since it was not relevant to the studies under review. A maximum score of six points per study could therefore be attained and was required in order for studies to be considered for inclusion in meta-analysis.

1.4 RESULTS

1.4.1 Search results

Figure 1 depicts the literature search process and results. After excluding duplicates, 179 records were identified. These were assessed for eligibility based on abstract content, key words and publication source, leading to the exclusion of 138 records. A total of 41 full-text records were then assessed for eligibility, of which 15 met inclusion criteria, but with overlapping samples identified for three studies conducted by Healey and Rucklidge (Healey & Rucklidge, 2005; Healey & Rucklidge, 2006a, 2006b) and a partial overlap in samples between three studies conducted by Shaw and Brown (Shaw, 1992; Shaw & Brown, 1990, 1991). It was therefore necessary to exclude three records (Healey and Rucklidge, 2006a, Healey and Rucklidge, 2006b; Shaw and Brown, 1992) to remove this potential source of bias. Two further records (Shaw & Brown, 1999; Solanto & Wender, 1989) were also excluded, as they did not report the mean or standard deviation of DT scores for cases and controls, making it impossible to calculate the SMD for these studies. This left 10 records for inclusion in the review. One of these records (Funk, Chessare, Weaver, & Exley, 1993; Solanto & Wender, 1989) examined the longitudinal effects of ADHD medication on DT; however because the impact of medication was not directly relevant to the review question only cross-sectional data from the pre-treatment phase of this study was examined.

Figure 1.Literature Search Process and Results



4.2 Data Extraction

The extracted data are presented in Table 1 including the sample characteristics, the methods used to classify ADHD and the measures of DT used in each study.

Table 1. Study characteristics

	Case		Control		ADHD classification	Measure of DT
	N (M/F)	Age: M (SD)	N (M/F)	Age: M (SD)		
Abraham <i>et al</i> (2006)	11 (8/3)	13.18 (NA)	21 (12/9)	13.48 (NA)	Clinical diagnosis using DSM-IV criteria.	UT: Verbal - Fluency and Uniqueness (Originality)
Barkley <i>et al</i> (1996)	25 (16/9)	22.50 (4.00)	23 (14/9)	22.00 (4.00)	Clinical diagnosis using DSM-IV criteria, made by research team.	UT: Verbal - Fluency
Fugate <i>et al</i> (2013)	17 (10/7)	14.11 (1.46)	20 (13/7)	14.44 (1.53)	Research diagnosis based on self-report questionnaire.	TTCT: Verbal - Fluency, Originality, Elaboration, Abstractedness of Titles, Resistance to Premature Closure, Total Creativity Index.
Funk <i>et al</i> (1993)	19 (19/0)	NA	21 (21/0)	NA	Clinical diagnosis (criteria not specified).	TTCT: Figural - Total Creativity Index.
Healey & Rucklidge (2005)	33 (23/10)	NA	34 (16/18)	NA	Clinical diagnosis using DSM-IV criteria.	TTCT: Figural - Fluency, Originality, Elaboration, Abstractedness of Titles, Resistance to Premature Closure, Creativity Index.
Murphy <i>et al</i> (2001)	105 (79/26)	21.10 (2.70)	64 (44/20)	21.20 (2.40)	Clinical diagnosis using DSM-IV criteria, made by research team.	UT: Verbal - Fluency.
Shaw & Brown (1990)	16 (13/3)	11.96 (0.77)	16 (13/3)	11.97 (0.65)	Research diagnosis based on psychologist/ teacher opinion.	TTCT: Figural and Verbal - Fluency, Originality, Flexibility, Total Creativity Index.
Shaw & Brown (1991)	16 (11/5)	11.95 (0.60)	16 (11/5)	12.07 (0.73)	Research diagnosis based on teacher-report.	TTCT: Figural and Verbal - Fluency, Originality, Flexibility, Total Creativity Index.
White & Shah (2006)	45 (21/24)	19.40 (1.21)	45 (22/23)	19.5 (1.44)	Clinical diagnosis using DSM-IV criteria.	UT: Fluency, Originality, Flexibility, Total Score.
White & Shah (2011)	30 (17/13)	20.10 (NA)	30 (14/16)	19.90 (NA)	Clinical diagnosis (criteria not specified).	ATTA: Figural and Verbal - Fluency, Originality, Flexibility, Elaboration.

Note: N = number of cases/controls; M/F = male/female; M = mean age, SD = standard deviation; age presented in years, converted from months for Shaw and Brown (1990); NA = data Not Available; UT = Uses Task; TTCT = Torrance Tests of Creative Thinking; ATTA = Abbreviated Torrance Test for Adults.

1.4.2 Extraction of data on measures

Classification of ADHD:

The identified studies varied in the methods used to classify ADHD cases. In seven studies ADHD was diagnosed clinically, either by the clinical team undertaking the research or by a separate clinic with the diagnosis verified by the researchers. The majority of these studies applied DSM-IV ADHD diagnostic criteria apart from research by Funk et al (1993) and White and Shah (2011), in which the diagnostic criteria were not specified. The remaining three studies classified ADHD cases on the basis of self or teacher reports of ADHD symptoms.

Measurement of DT:

Two primary measures of DT were used in the included studies. Four studies used a version of the Uses Task (UT, referred to as the Alternate Uses Task or the Unusual Uses Task), wherein the aim is to generate as many alternate uses for common objects as possible within a set time (e.g., generate as many novel uses as possible for a brick within two minutes). The UT has been described by a number of researchers (Getzels & Jackson, 1962; Guilford, 1967; Wallach & Kogan, 1965) and is based on Guilford's Structure of the Intellect theory (Guilford, 1968), in which the UT was a measure of Divergent Production. The UT assesses the verbal form of DT and yields scores for Fluency, Originality, Flexibility and Elaboration (Plucker & Makel, 2010). These versions of the UT generally show acceptable properties in psychometric research (Runco & Acar, 2012).

Six studies used a version of the Torrance Tests of Creative Thinking (TTCT), a standardised measure of DT comprised of seven verbal and three figural subtests (Plucker & Makel, 2010; Torrance, 1974). The original version of the TTCT yields scores for Fluency, Originality, Flexibility and Elaboration, in addition to a Creativity Index score based on performance across all domains (Torrance, 1974). However, test scoring was subsequently revised so that figural subtests could be scored for Resistance to Premature Closure (RtPC; the ability to persist with a task) and Abstractedness of Titles (AoT; the ability to generate abstract ideas) and with the domain of flexibility removed (Torrance & Ball, 1984). An abridged version, the Abbreviated Torrance Test for Adults (ATTA), has also been

developed and consists of one verbal and two figural subtests scored for Fluency, Originality, Flexibility and Elaboration of ideas (Goff & Torrance, 2002). The TTCT has generally acceptable psychometric properties and features normative data to guide scoring and interpretation (Kyung, 2006), although care should be taken when interpreting the Creativity Index score due to the fact that it is a composite of the separate DT domains (Runco, 2010).

Five of the studies included in this review made use of additional measures of creativity, of which 3 studies included a secondary scale that may be classed as a measure of DT (Abraham, Windmann, Siefen, Daum, & Güntürkün, 2006; Barkley, Murphy, & Kwasnik, 1996; Healey & Rucklidge, 2005). Results pertaining to these measures are not included in this review, since the same measure was not used across multiple studies and because these secondary measures are less widely recognised than the primary measures already described. Therefore the remainder of this review concentrates on ADHD case/control differences in DT Fluency, Originality, Flexibility and Elaboration, as assessed using the UT and/or TTCT, and for RtPC, AoT and Creativity Index scores from the TTCT. Both Verbal and Figural forms of DT are considered.

1.4.3 Quality Appraisal

Results of the Quality Appraisal exercise are presented in Table 2. Only one study attained the maximum score of 6/6, while the lowest score attained was 1/6. For the domain of Selection, only two studies attained the maximum score of 4/4, indicating that the majority of studies failed to adequately define case/control status, and/or failed to demonstrate that cases and controls were drawn from representative populations. For the domain of Comparability, seven studies adequately controlled for age while only three studies adequately controlled for IQ and ADHD medication status, the majority of which had controlled for IQ but not medication (see footnote, Table 2). These results indicate a relatively poor level of quality and marked heterogeneity in the methods used across studies.

Table 2. Quality appraisal results using the adapted Newcastle Ottawa Scale

	Selection				Comparability		Total score
	Case Definition	Case Representativeness	Control Selection	Control Definition	Age-matched	IQ-matched and Un-medicated	
Abraham <i>et al</i> (2006)	1	0	1	0	1	0 ^a	3
Barkley <i>et al</i> (1996)	1	0	1	1	1	1	5
Fugate <i>et al</i> (2013)	0	0	1	1	1	0 ^a	3
Funk <i>et al</i> (1993)	1	0	0	1	0*	1	4
Healey & Rucklidge (2005)	1	1	1	1	0	0 ^a	4
Murphy <i>et al</i> (2001)	1	1	1	1	1	1	6
Shaw & Brown (1990)	0	0	0	0	1	0 ^a	1
Shaw & Brown (1991)	0	0	1	1	1	0 ^a	3
White & Shah (2006)	1	0	1	1	0	0 ^b	3
White & Shah (2011)	0	1	1	1	0	0 ^b	3

Note: Studies were awarded points in accordance with criteria outlined in the NOS manual; ^aStudy adequately controlled for IQ but not medication status; ^bStudy adequately controlled for medication status but not IQ; *Funk *et al* (1993) reported that cases and controls were matched for age but did not report statistics on age meaning this could not be independently verified.

In summary, only one study attained a score of 6/6 and was considered of sufficient quality for inclusion in meta-analysis. A meta-analysis was therefore not performed as originally intended, as is recommended when studies are of poor quality or there is heterogeneity among studies (Cochrane Collaboration, 2013). Instead, only a narrative synthesis of the data is presented. Studies awarded 5-6 points are described as high quality, studies awarded 3-4 points are described as moderate quality and studies awarded 0-2 points are described as low quality.

1.4.4 Narrative synthesis

Table 3 reports the results across studies, presented as the standardised mean difference (SMD) in DT scores between cases and controls. A narrative synthesis was completed for each DT domain, in addition to examining the effects of age, intellectual ability and medication status to account for the methodological variation across studies identified during quality appraisal.

Table 3. Summary of study results

	Outcome measure	Result
Abraham <i>et al</i> (2006)	UT	
	Fluency	No sig. case/control difference (SMD = 0.06)
	Originality	No sig. case/control difference (SMD = 0.20)

Table 3. (Continued)

	Outcome measure	Result
Barkley <i>et al</i> (1996)	UT	
	Fluency	No sig. case/control difference (SMD = -0.26)
Fugate <i>et al</i> (2013)	TTCT (Figural)	
	Fluency	No sig. case/control difference (SMD = 0.12)
	Originality	No sig. case/control difference (SMD = -0.13)
	Elaboration	Cases scored sig. higher than controls (SMD = 0.61)
	AoT	Cases scored sig. higher than controls (SMD = 0.61)
	RtPC	No sig. case/control difference (SMD = -0.11)
	Creativity Index	Cases scored sig. higher than controls (SMD = 0.89)
Funk <i>et al</i> (1993)	TTCT	
	Creativity Index	No sig. case/control difference (SMD = -0.62)
Healey & Rucklidge (2005)	TTCT (Figural)	
	Fluency	No sig. case/control difference (SMD = 0.35)
	Originality	No sig. case/control difference (SMD = 0.12)
	Elaboration	Cases scored sig. lower than controls (SMD = -0.79)
	AoT	No sig. case/control difference (SMD = -0.29)
	RtPC	No sig. case/control difference (SMD = 0.22)
	Creativity Index	No sig. case/control difference (SMD = -0.03)
Murphy <i>et al</i> (2001)	UT	
	Fluency	No sig. case/control difference (SMD = -0.03)
Shaw & Brown (1990)	TTCT (Figural)	
	Fluency	No sig. case/control difference (SMD = 0.16)
	Originality	Cases scored sig. higher than controls (SMD = 1.17)
	Flexibility	Cases scored sig. higher than controls (SMD = 0.95)
	Creativity Index	Cases scored sig. higher than controls (SMD = 1.14)
	TTCT (Verbal)	
	Fluency	No sig. case/control difference (SMD = 0.00)
	Originality	No sig. case/control difference (SMD = -0.10)
	Flexibility	No sig. case/control difference (SMD = -0.27)
	Creativity Index	No sig. case/control difference (SMD = 0.02)
Shaw & Brown (1991)	TTCT (Figural)	
	Fluency	Cases scored sig. higher than controls (SMD = 0.64)
	Originality	Cases scored sig. higher than controls (SMD = 0.77)
	Flexibility	No sig. case/control difference (SMD = 0.12)
	Creativity Index	Cases scored sig. higher than controls (SMD = 0.83)
	TTCT (Verbal)	
	Fluency	No sig. case/control difference (SMD = -0.58)
	Originality	No sig. case/control difference (SMD = -0.09)
	Flexibility	No sig. case/control difference (SMD = -0.15)
	Creativity Index	No sig. case/control difference (SMD = -0.21)
White & Shah (2006)	UT	
	Fluency	Cases scored sig. higher than controls (SMD = 0.66)
	Originality	Cases scored sig. higher than controls (SMD = 0.71)
	Flexibility	Cases scored sig. higher than controls (SMD = 0.91)
White & Shah (2011)*	ATTA (Figural)	
	Originality	Cases scored sig. higher than controls (SMD = 0.81)

Note: UT = Uses Task; TTCT = Torrance Tests of Creative Thinking; ATTA = Abbreviated Torrance Test for Adults; SMD = standardised mean difference; *The study by White & Shah (2011) reported additional findings for other domains of DT assessed using the ATTA, these results are not reported since the authors did not provide mean scores or standard deviations for these domains, meaning that the SMD could not be calculated.

Fluency:

Eight studies reported on Fluency, four of which used a UT and four used the TTCT. Of the studies using a UT, three reported no significant differences in Fluency between cases and controls, with small effect sizes across studies. Two of these studies were of high quality and one was of moderate quality. One study found that individuals with ADHD scored significantly higher for Fluency than controls and reported a moderate effect size but was of only moderate quality, limiting the extent to which this finding should be generalised. Of the studies that used the TTCT, four examined figural Fluency and two also examined verbal Fluency. For figural Fluency, three studies of low-to-moderate quality reported no significant case/control differences, while one study of moderate quality study reported that individuals with ADHD scored significantly higher for figural Fluency, with a moderate effect size. The studies examining verbal Fluency both reported no significant differences between cases and controls, with small to moderate effects. Overall, these results suggest that individuals with ADHD do not perform significantly better than individuals without ADHD with regard to fluency of ideas. There was no clear pattern with regard to performance on tasks of figural versus verbal Fluency, since the UT can be considered a verbal task.

Originality:

Seven studies reported on Originality, two of which used a UT and five used a version of the TTCT. Of the studies that used a UT, one study of moderate quality reported no significant case/control differences while another study of moderate quality found that individuals with ADHD scored significantly higher for Originality of ideas than controls, with a moderate effect size. All of the studies using the TTCT assessed figural Originality. Two studies, of moderate quality, found no significant case/control differences. Three studies, of low-to-moderate quality, found that those with ADHD scored significantly higher for Originality than controls, with moderate-to-large effect sizes. Two of these studies also examined verbal Originality but found no significant differences between cases and controls. Overall these results should be viewed as inconclusive, but indicate that individuals with ADHD may be more original in their thinking style than controls, with the majority of significant results found for figural Originality tasks but in lower quality research.

Flexibility:

Three studies reported on Flexibility of ideas. One study of moderate quality used the UT and found that those with ADHD scored significantly higher for Flexibility than controls, with a large effect size. Two studies of low-to-moderate quality used the TTCT and examined both figural and verbal forms of Flexibility. For the figural task, one study reported significantly greater Flexibility for those with ADHD compared to controls with a large effect size; however the second study reported no significant case/control difference. For the verbal task, neither study reported a significant difference between cases and controls. These results suggest that individuals with ADHD may be more flexible on tasks of ideation, although due to the small number of studies this finding should be interpreted with caution. Once again, there were no clear patterns with regard to performance on figural versus verbal tasks.

Elaboration:

Two studies of moderate quality reported on Elaboration of ideas, both of which used a figural form of the TTCT. One study reported significantly greater elaboration of ideas among those with ADHD, while the other reported significantly greater elaboration among controls. Both studies reported moderate effect sizes. Overall these results should be seen as inconclusive due to different directions of effect.

Resistance to Premature Closure (RtPC):

The same two studies reported on RtPC from the figural form of the TTCT. One study identified significantly greater resistance to premature closure among the ADHD group, while the second identified no significant case/control differences. These results should be considered inconclusive overall.

Abstractedness of Titles (AoT):

The same two studies examined AoT from the figural form of the TTCT, both of which found no significant differences between cases and controls. This suggests

that individuals with and without ADHD are equivalent in the abstraction of their responses on figural ideation tasks.

Creativity Index scores:

Five of the studies that used the TTCT reported a total creativity index score, all of which had used a figural form of the TTCT, while two had also used a verbal form of the TTCT. All studies were of low-to-moderate quality. For the figural form, two studies found no significant differences between cases and controls; however three studies reported that those with ADHD scored significantly higher for the total creativity index score with large effect sizes across studies. For the verbal form, there were no significant differences. Overall, these results suggest that individuals with ADHD may show enhanced DT when compared to controls, but only for figural tasks. However, this conclusion should be interpreted with caution due to the level of quality of studies.

Effects of age, intellectual ability and medication:

Significant case/control differences in DT were found in six studies, of which five reported significantly better performance among ADHD cases than controls. It is important to consider the characteristics of these studies and whether the results could have been influenced or caused by other variables.

In terms of age, three out of the five studies examined DT in child and adolescent populations (Fugate, Zentall, & Gentry, 2013; G. A. Shaw & Brown, 1990, 1991), while the other two studies examined DT among adults (H. A. White & Shah, 2006, 2011). Therefore, it does not appear that DT strengths were limited to either younger or older individuals. The three studies conducted with children and adolescents adequately controlled for age, while the two studies conducted with adults did not.

In terms of intellectual ability, there is some potential for bias across studies. One study (Fugate et al., 2013) examined a group of intellectually gifted adolescents who scored highly for ADHD based on self-reported symptoms. Although IQ was controlled for in this study, it remains possible that the use of a gifted sample without a confirmed ADHD diagnosis may have resulted in bias, particularly since

some aspects of ADHD and creativity are manifestly similar (Cramond, 1994), meaning that the children selected for the ADHD group may actually have been selected for being highly gifted *and* highly creative. The other two studies that examined children also introduced a similar bias. In one (Shaw and Brown, 1990), children were selected based on teacher opinions of whether they had ADHD, although IQ was controlled for and the sample selected to include children across the IQ spectrum. In the other (Shaw and Brown, 1991), children were selected for inclusion only if they were of above average intelligence (an IQ score of 115 or higher), with ADHD diagnoses again based on teacher opinions. Finally, both adult studies (White & Shah, 2006, 2011) recruited their ADHD and control samples from universities. While these studies took a more rigorous approach to diagnosing ADHD, they examined the relationship between DT and ADHD among high-functioning individuals and did not adequately control for IQ.

In terms of medication status, three of the studies that found significant DT strengths for those with ADHD did not control for medication status (Fugate et al., 2013; Shaw & Brown, 1990, 1991), a factor that may have biased results since medication could have potentially enhanced cognition.

Overall, the quality of studies reporting significantly better DT scores among those with ADHD tended to be low, with NOS scores ranging from 1-3. In contrast, studies that found no significant case/control differences, or significantly worse performance among those with ADHD, tended to be more methodologically robust with NOS scores ranging from 3-6.

1.5 DISCUSSION

The aim of this study was to systematically review published case/control research into the association between ADHD and DT. To meet this aim, the authors had intended to conduct a meta-analysis of identified studies; however it was not possible to conduct meta-analysis due to an insufficient number of high quality studies with heterogeneity of measures. Consequently, only a narrative review was undertaken.

The narrative review examined the results of 10 studies, which compared individuals with ADHD to controls using two measures of DT: the Uses Task (UT)

and the Torrance Tests of Creative Thinking (TTCT). Results were synthesised for the domains of Fluency, Originality, Flexibility and Elaboration, in addition to the domains of Resistance to Premature Closure (RtPC), Abstractedness of Titles (AoT) and Creativity Index for studies using the TTCT. This advances the results of previous, older reviews, which looked at the broader association between ADHD and creativity without taking a systematic approach (Cramond, 1994; Healey & Rucklidge, 2008).

Overall, the narrative synthesis indicated no case/control differences in the domain of AoT and inconclusive results for the domains of RtPC and Elaboration. For the domain of Fluency, the majority of studies also indicated no significant differences between cases and controls. However, there was some evidence that individuals with ADHD scored significantly higher than controls for the domains of Originality and Flexibility. The results of the TTCT also indicated that individuals with ADHD tended to attain higher Creativity Index scores than controls, although this finding should be interpreted with caution since the Creativity Index is a composite of performance across domains (Runco, 2010). Though interesting, these results are inconclusive and should be interpreted as such due to low quality, high levels of methodological variation and a bias towards including only higher functioning individuals with ADHD in the papers that reported significantly better performance among the ADHD samples relative to controls. Therefore, only tentative conclusions can be drawn.

At best, these significant results suggest that ADHD *may* be associated with enhanced DT in two, related domains; specifically the ability to generate novel ideas (Originality) across multiple, divergent categories (Flexibility). This finding that is consistent with anecdotal reports (Hallowell & Corman, 2006; Pinker, 2008) and qualitative research (Brinkman et al., 2012; Sedgewick et al., in preparation) suggesting that ADHD may confer an advantage in terms of the ability to generate novel and creative ideas. Enhanced DT within these domains may account for any associations between ADHD with creativity, since Originality and Flexibility have both been linked with tangible creative output among the general population (see Runco, 2010, for review). Indeed, one of the studies reviewed in this paper did report associations of ADHD and Originality with higher scores for creative achievement (White & Shah, 2011).

A more conservative conclusion, which may better account for the non-significant results found across the majority of studies, is that individuals with ADHD are not *impaired* in DT relative to controls, meaning that ideation remains intact despite deficits in other areas of cognition, such as impaired attention and executive functioning (Barkley, 1997; Castellanos & Tannock, 2002; Johnson et al., 2009; Willcutt et al., 2005). This conclusion can be still interpreted from a positive psychological perspective, since it suggests that individuals with ADHD may not be disadvantaged relative to their peers. However, this should be tempered against results from the one study in which individuals with ADHD performed significantly worse than controls for DT Elaboration (Healey & Rucklidge, 2005), and against previous conclusions stating that enhanced DT or creative output persists *despite* having ADHD and not because of it (Healey & Rucklidge, 2008).

Three studies were excluded from this review that reported on the association of ADHD with neuropsychological measures of verbal and figural fluency (Takacs, Kobor, Tarnok, & Csepe, 2014; L. Tucha et al., 2011; O. Tucha et al., 2005). These neuropsychological measures assess executive functioning and elements of semantic and visuospatial memory, rather than DT. However, these studies may still shed light on the neuropsychological basis of DT among individuals with ADHD. Across these studies individuals with ADHD performed worse than controls for tasks of semantic fluency, on which they showed impaired set switching indicative of executive dysfunction. Two of the studies included in this review also reported impaired executive performance among individuals with ADHD on tasks of inhibition, sustained attention and working memory (Barkley et al., 1996; Murphy, Barkley, & Bush, 2001); while a study by Healey and Rucklidge (2006b), excluded from this review due to a sample overlap with the included 2005 study by the same authors, also reported impaired neuropsychological performance on measures of processing speed and reaction time among individuals with ADHD. It is interesting to note that, for the most part, individuals with ADHD from these studies did not differ significantly from controls in terms of their DT task performance. This further highlights the fact that DT does not seem to be impaired in ADHD, despite a correlation of lower DT with poor performance on executive functioning tasks among the general population (Benedek et al., 2014; Hao et al., 2015).

Research into intelligence and DT suggests there is a threshold effect, whereby DT correlates modestly with intelligence for individuals with an IQ below 120 and with no correlation above this threshold (Kim, Cramond, & VanTassel-Baska, 2010). However, other studies of DT have identified associations of increased DT Fluency with higher levels of fluid and crystallised intelligence, arguing that intelligence is required for the generation of a greater number of ideas (Batey & Furnham, 2006). These studies have also identified associations of DT Originality with personality variables such as Extraversion. These findings are of interest owing to a small but significant correlation of lower IQ with higher levels of ADHD symptoms (Frazier, Demaree, & Youngstrom, 2004) and because of the inclusion of higher functioning samples in many of the studies in this review. It will be important to examine the relationship between ADHD and DT across the IQ spectrum in future, also taking into account the role of personality variables such as Extraversion and Novelty seeking.

Similarly, it is important to consider how medication might influence DT among individuals with ADHD, since stimulant and non-stimulant medication is prescribed with a view to improving aspects of cognition such as attention and executive functioning (Faraone, Biederman, Spencer, & Aleardi, 2006). Five of the studies included in this review did not adequately control for medication among participants with ADHD, introducing potential for bias. One of the included studies did examine medication effects, although for the purposes of this review results were included only from the un-medicated comparison of individuals with ADHD and controls (Funk et al., 1993). The full set of results from this study is interesting: Off-medication, there were no significant difference in DT between those with ADHD and controls; however on-medication those with ADHD scored significantly higher for DT than controls. This suggests that ADHD medication enhances DT, consistent with the results of some other pharmacological studies (Douglas, Barr, Desilets, & Sherman, 1995), but not others (Farah, Haimm, Sankoorikal, Smith, & Chatterjee, 2009; Solanto & Wender, 1989). It was beyond the scope of this review to examine the full impact of ADHD medication on DT; however this should be an aim for future research.

1.5.1 Implications

This is the first systematic review of the associations between ADHD and DT and these findings therefore have important implications. In terms of clinical implications, the finding that DT is not impaired in ADHD is consistent with a positive psychological approach, since it shows that there are individual differences in DT among those with ADHD as opposed to a deficit in this domain. From a therapeutic perspective, this can be used in therapy to help individuals with ADHD to build a sense of self-efficacy and self-esteem by drawing on their own internal resources (Newark & Stieglitz, 2010; Young & Bramham, 2012). This is not only useful when using cognitive behavioural therapy, but also when taking a narrative approach to strengthen stories of individual successes relative to the problem-focussed narratives that often serve to maintain difficulties with mental health (White & Epston, 1990). Clinicians should also consider how the environment might be used to facilitate DT and creativity among individuals with ADHD (Leroux & Levitt-Perlman, 2000).

In terms of research implications, there were wide variations in the methods used across studies. To establish whether ADHD is associated with DT, further, methodologically robust research is required. This should not only include case/control studies conducted at a single point in time, but also studies examining the longitudinal and continuous associations between ADHD symptoms and DT. This is particularly relevant, since ADHD as a disorder represents the extreme end of a near-normally distributed set of symptoms across the dimensions of inattention and hyperactivity/impulsivity (Frazier, Youngstrom, & Naugle, 2007), which are known to change over time (Larsson, Dilshad, Lichtenstein, & Barker, 2011). This is important, since the results of existing studies into the continuous associations between the DT domains and ADHD symptoms are conflicted (Brandau et al., 2007; Zabelina, Condon, & Beeman, 2014). Research should also seek to elucidate the neuropsychological and biological mechanisms that underpin the association of ADHD with DT and how these might relate to tangible creative outcomes.

1.5.2 Limitations

The results of this review should be interpreted in the context of several limitations. First, the variation in quality and methods used across studies means that it is difficult to draw firm conclusions from the results of this review, further highlighting the need for additional research. A second, related limitation is that the NOS, used for quality appraisal in this study, has yet to be validated in empirical or independent research, with some studies suggesting that this measure lacks reliability and validity (Lo, Mertz, & Loeb, 2014; Stang, 2010). Additionally, this study adapted the NOS, which has the potential to impede psychometric properties of the measure. Third, the stringent inclusion/exclusion criteria for this review means some studies were excluded that may have been relevant in helping to understand the associations between ADHD and DT. In particular, the results of two studies that reported no significant case control differences were not included as the authors did not present descriptive statistics for the DT scores attained by cases and controls (Shaw & Brown, 1999; Solanto & Wender, 1989), while only the significant results of another study were included in review for the same reason (White & Shah, 2011). This was deemed necessary to preserve the overall quality of this review and if these studies had been included the overall conclusions are unlikely to have changed. Fourth, this study looked at DT, which is only one aspect of cognition believed to tap into creative potential. It did not examine other important components of creativity such as CT or real-world creative output. These variables should be studied in future if the extent of the relationship between ADHD, DT and creativity is to be fully understood.

1.5.3 Conclusions

Overall, this systematic review indicates that DT is not impaired among individuals with ADHD relative to controls, with ADHD possibly associated with enhanced DT in the domains of Originality and Flexibility. These results are consistent with a positive psychological approach in identifying areas of intact cognitive functioning in ADHD, which can be used to help build self-esteem in therapy. The results of this review do not indicate whether ADHD is associated with enhanced creativity, since DT is only a measure of creative potential. Therefore, further research is required in order to understand whether ADHD is consistently associated with

enhanced DT, and whether this can lead to enhanced creativity across the lifespan.

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CHAPTER 2: SERVICE IMPROVEMENT PROJECT

Project title:

Video Information and Expectations of therapeutic Work (VIEW): Development and evaluation of an information video about psychological therapy

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2.1 ABSTRACT

Background: Psychological therapists have a clinical duty to provide patients with information prior to completing an initial assessment or therapy appointment. This is important not only for the process of informed consent, but also since accurate knowledge and expectations about therapy have been linked to higher rates of therapy attendance. The Video Information and Expectations of therapeutic Work (VIEW) project is a Service Improvement Project, in which an information video about psychological therapy was developed and evaluated in a collaborative venture between a University and the staff and patients of an NHS Community Mental Health Team.

Methods: The VIEW project followed a Plan, Do, Study, Act (PDSA) model of service improvement and moved through four distinct phases: Phase 1 was stakeholder consultation to determine video content; Phase 2 was development of the video; Phase 3 was piloting the video to determine whether it improved patient knowledge/expectations for therapy and whether it was associated with greater rates of therapy attendance; Phase 4 was analysis of the data.

Results: A video was developed in Phases 1-2. During phase 3 only five individuals provided feedback on the video and due to missing data it was not possible to analyse these results. An audit identified no significant difference in rates of therapy attendance between the five individuals who viewed the video vs. five individuals who had not; however these results are limited by the small sample size.

Conclusions: The successful development and rollout of an information video about psychological therapy is an example of service improvement in practice. Further work is now required to evaluate the effectiveness of the video.

Keywords: Psychological Therapy; Informed Consent; Expectations; Engagement; Video; Service Improvement.

2.2 INTRODUCTION

2.2.1 Background literature

In the United Kingdom (UK) it is a requirement for health professionals to seek informed consent prior to undertaking clinical procedures (Department of Health, 2009). This guidance extends to Clinical Psychologists and other professionals completing psychological assessment or treatment with patients (Division of Clinical Psychology, 1995; Health and Care Professions Council, 2012). Assuming that an individual has capacity (Mental Capacity Act, 2005), consent should be sought once relevant information about a procedure has been provided. It is therefore good practice to provide patients with information about psychological therapy in timely manner, preferably in advance of an initial appointment so that it can be processed and considered.

Relevant information can be provided using a number of different mediums, which must be appropriate for an individual's level of need (Department of Health, 2009). Traditionally, information is provided in written (e.g., leaflets or letters) or verbal (e.g., telephone or face-to-face) form. However, the NHS is making increased use of digital media in accordance with the Department of Health's Information Strategy, which calls for the use of technology *"to make health and care services more convenient, accessible and efficient"* (Department of Health, 2012, p.6). Information videos are one way of implementing this strategy and have been used to improve patient understanding in relation to procedures as varied as surgery (Nehme et al., 2013; Sahai, Kucheria, Challacombe, & Dasgupta, 2006), blood transfusion (Cheung, Lieberman, Lin, & Callum, 2014) and adherence to medication regimes (Ingersoll et al., 2011). A brief search of the Internet indicates that a number of NHS Trusts now host online videos about the psychological services they provide; however, research in this field has primarily focussed on the efficacy of video-based psycho-education (Grey et al., 2013; Karlin et al., 2010; Oliveira, Gevirtz, & Hubbard, 2006), rather than examining service improvements associated with information videos about psychological therapy more generally.

The immediate benefit of an information video is likely to be improved patient knowledge and understanding of what psychological therapy involves, which is undoubtedly important with regard to informed consent procedures. Beyond this,

accurate information has the potential to improve expectations for therapy, both in terms of how successful patients believe therapy might be (Outcome Expectations) and what patients believe therapy will involve (Process Expectations; Constantino, Ametrano & Greenberg, 2012; Greenberg, Constantino & Bruce, 2006). It has been argued that such expectations account for up to 15% of the improvements made in therapy (Lambert & Barley, 2001). This finding has not been consistently replicated; however, the overall trend across studies is for a positive association between expectations and clinical improvement (Noble, Douglas, & Newman, 2001). This is supported in recent research, in which patient expectations were found to moderate the effects of cognitive-behavioural therapy (CBT) on changes in symptoms of anxiety (Boettcher, Renneberg, & Berger, 2013) and depression (Webb, Kertz, Bigda-Peyton, & Bjorgvinsson, 2013). Accurate expectations have also been linked with higher rates of therapy attendance, accounting for 13% of the variance in attendance of initial appointments (Norberg, Wetterneck, Sass, & Kanter, 2011). This is important in the NHS, where up to 20% of mental health appointments are missed (Mitchell & Selmes, 2007).

A few studies have examined the impact of information videos on therapeutic expectations. Douglas, Nobel and Newman (1999) created a 10-minute video about initial psychiatric consultations. After viewing the video, patients were found to have more accurate expectations about their initial consultation when compared to a control group and in qualitative feedback reported that the video was useful; however the video did not ameliorate symptoms of state anxiety or improve patient satisfaction with treatment. Fende Guarjardo and Anderson (2007) found that a multimedia psychoeducation package about what to expect in therapy, which included video information, was associated with improved expectations for therapy and with a reduction in fears about therapy. However, neither of these studies examined the impact of video information on therapy attendance rates.

In summary, an information video has the potential to improve patient knowledge and understanding about psychological therapy, which could improve expectations for therapy and levels of engagement with mental health services. On a more human level, an information video might also reduce anxiety associated with attending therapy for the first time.

2.2.2 Intended improvements

The Video Information and Expectations of therapeutic Work (VIEW) Project was a service improvement project implemented in a Community Mental Health Team (CMHT) for adults of working age. The primary aim was to develop and evaluate a brief information video about what to expect when attending psychological therapy. The need for this video was identified via a previous Experience-Based Co-Design project, in which service users requested an information video that could be viewed before attending therapy appointments (Cooper, Gillmore & Hogg, 2016).

2.2.3 Study questions

- i. Does an information video improve patient knowledge and expectations about psychological therapy? This question was addressed by measuring perceived change in knowledge and expectations about therapy after viewing the video.
- ii. Does an information video improve engagement with services? This question was addressed by examining attendance rates for initial appointments in the five months after the video was introduced, as compared with the same time period the previous year.

2.3 METHODS

2.3.1 Service setting and ethical issues

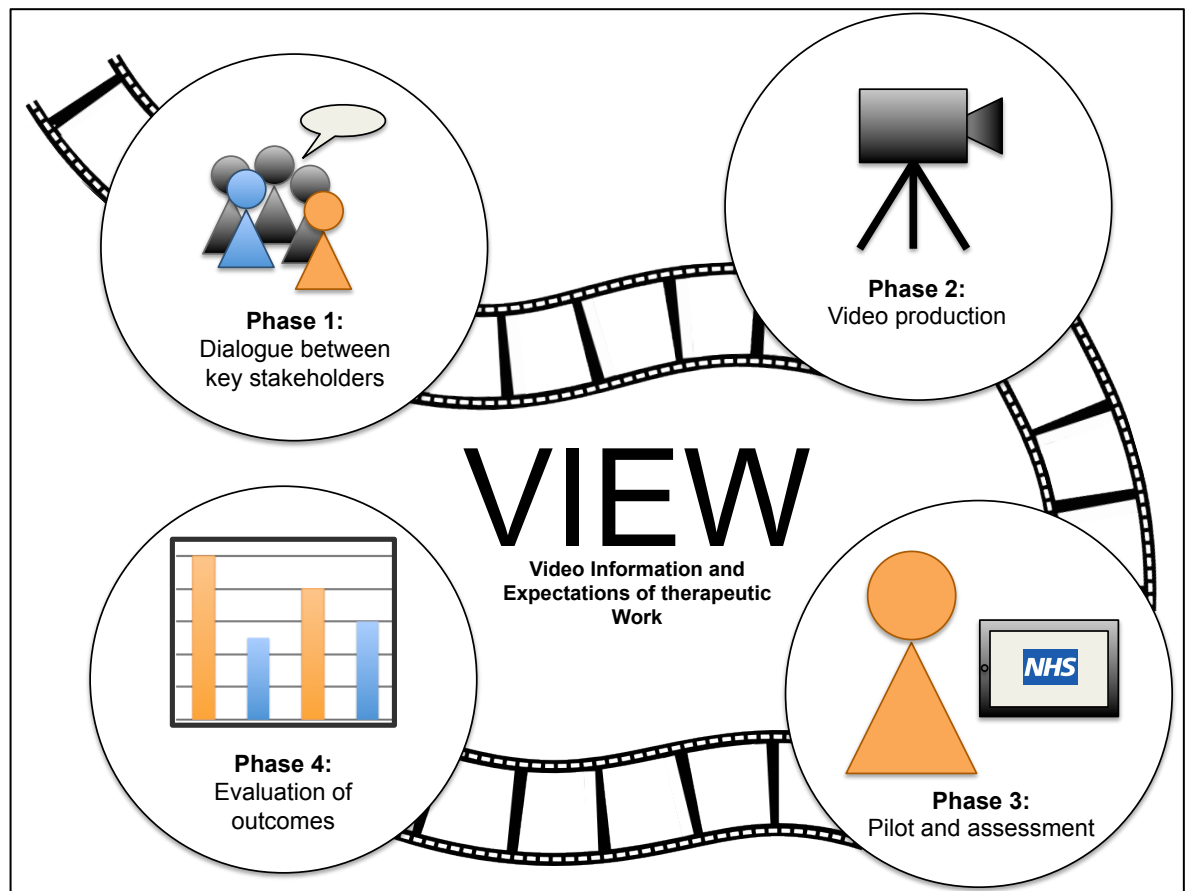
The VIEW project was completed within Avon and Wiltshire Partnership (AWP) NHS Foundation Trust. Clinicians working for and patients accessing psychological therapy within a Community Mental Health Team (CMHT) were invited to participate at various stages of this project. Trust executives and the Trust lead for service user involvement were also consulted. The project was reviewed by the Trust Research and Development department and met criteria for service improvement activities, and was therefore exempt from full NHS ethics review. The project was reviewed and approved by the University of Bath Psychology Ethics Committee (Project Reference 15-011; Appendix C). Patients who completed questionnaires about the video were asked to provide written,

informed consent, and those who participated in focus groups or appeared in the information video were reimbursed for their travel expenses and their time.

2.3.2 Procedures

The VIEW project moved through four distinct phases (Figure 1) and followed a 'Plan, Do, Study, Act' (PDSA) cycle (Figure 2; Langley, Nolan, Nolan, Norman, & Provost, 2009).

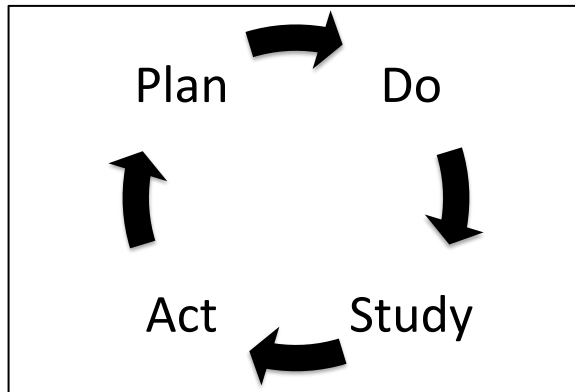
Figure 1. VIEW Project flow chart



The first phase of the intervention involved consultation with key stakeholders, including therapists and service user representatives from the BANES Therapies Team. Two service users accessing psychological therapy attended a focus group, where their ideas and priorities regarding the format and content of an information video were identified. The results of the service user focus group were then taken to a focus group attended by four members of the Therapies Team, in which clinician priorities for the format and content of the video were discussed. A summary document was drafted and made available to the Therapies Team for review and comment, and included the option to rank the importance of different

pieces of information to be included in the video. Comments received were then used to draft a final document outlining the format and information content of the video. Details of the stakeholder consultation are provided in Appendix D.

Figure 2. The PDSA cycle



Adapted from Langley et al. (2009)

The second phase of the intervention was video production. The proposed content and format of the video was discussed with the media production unit at the University of Bath and a skeleton script was developed. Service users and clinicians from the Therapies Team were invited to appear in the video, in which they were interviewed using a semi-structured interview schedule based on the outcome of the stakeholder consultation (see Appendix E). In total, six clinicians and four service users appeared in the video and one service user provided quotes for the video that were read by an actor. Unedited video content was transcribed and clustered into themes that fitted within the skeleton script. A final script was then developed that included quotations from service users and clinicians, which was used by the media production unit for the purposes of editing and creating the video. The script is presented in Appendix F and a copy of the video is provided in Appendix G.

It should be noted that video production took longer than anticipated, primarily due to logistical difficulties (e.g., identifying service users and clinicians to participate in the video; arranging a time and location for filming that was mutually convenient for clinicians, service users and the media production unit; editing the video content in accordance with the needs of stakeholders while ensuring that the final video was of short duration). This led to a delay of approximately five months in implementation of phase three.

The third phase of the intervention involved piloting and evaluating the information video. From November 2015 to April 2016, clinicians within the Therapies Team were asked to send a DVD copy of the video to all patients newly referred for psychological therapy, together with a questionnaire booklet (Appendix H) that included instructions, an information sheet, a consent form and a debrief sheet. Patients were invited to read the information sheet and complete the consent form before watching the information video and rating their change in knowledge and expectations about therapy using a purpose-designed questionnaire (Section 2.3.3). Patients were asked to return their completed consent forms and questionnaires in person at an initial therapy appointment or via mail using a prepaid envelope. Patients who did not wish to complete the questionnaire were still provided with a copy of the video and were therefore not prevented from accessing information about psychological therapy. Data collection followed a cross-sectional design.

The fourth phase of the intervention involved evaluation of service improvement and is described in detail in Section 2.3.3.

2.3.3 Methods of evaluation and analysis

i. Does the information video improve patient knowledge and expectations about psychological therapy?

To determine whether the video improved knowledge and expectations about psychological therapy, descriptive statistics were compiled based on the results of the questionnaires completed by patients in phase 3.

A three-part, purpose-designed questionnaire was used to evaluate changes in patient knowledge and expectations about therapy after viewing the information video. In Parts 1 and 2, patients were asked to rate their level of agreement with eight statements using Visual Analogue Scales (Wewers & Lowe, 1990). Item content was selected based on literature concerning Process and Outcome Expectations for therapy (Constantino et al., 2012; Greenberg et al., 2006), items from existing questionnaires (Devilly & Borkovec, 2000; Norberg et al., 2011) and based on the outcome of stakeholder consultations completed in Phase 1.

Statements 1-5 (Part 1) asked patients to rate their change in knowledge about psychological therapy since viewing the video (e.g., “*Since viewing the video, I know more about what psychological therapy is*”) and can be seen as a measure of Process Expectations. Statements 6-8 (Part 2) asked patients to rate the change in how they felt about psychological therapy since viewing the video (e.g., “*Since viewing the video, I feel more hopeful about recovering from my current difficulties*”) and can be seen as a measure of Outcome Expectations (Constantino et al., 2012; Greenberg et al., 2006). A comments box (Part 3) allowed participants to provide additional, qualitative feedback on the video. Because the questionnaire was designed specifically for this study, no data concerning its psychometric properties are available.

Patient demographic information was additionally collected for the purposes of characterising the sample, using a 12-item questionnaire based on the NHS data dictionary (NHS, 2015), guidance from the Office for National Statistics guidance (ONS, 2014) and the Hollingshead’s index of socioeconomic status (Hollingshead, 2011).

ii. Does the information video improve engagement with services?

To determine the wider, service-level impact of the video, an audit was conducted that examined rates of therapy attendance among individuals who *had* versus *had not* viewed an information video. This was separate from the evaluation of questionnaires and, as an audit of routine clinical data, was considered exempt from the process of informed consent that applied to the questionnaires that were completed directly by participating patients. Data on attendance of the first six therapy appointments were examined for patients known to have watched the information video prior to their first therapy appointment, during the five-month period from November 2015 to April 2016. This was compared to data on attendance rates for the first six appointments of patients who accessed the service between November 2014 and April 2015. The percentage of attended appointments over this period was calculated and treated as a continuous variable, with group differences compared using a Mann Whitney U test. All analyses were completed using SPSS Version 20 (IBM Corp., 2011).

2.4 RESULTS

2.4.1 Implementation of the intervention

The completed information video was introduced at the end of November 2015 and was piloted over five months, until the end of April 2016. Clinicians indicated that they were sending the video out to all patients due to attend an initial psychological therapy appointment apart from those referred from inpatient or early intervention services; however subsequent discussions with the team suggested that this strategy was not implemented uniformly. This means that it was not possible to trace precisely how many participants were sent the video in advance of their initial appointments, although the service was provided with 25 copies of the video and all copies were reportedly sent out at least once. Further, due to changes in the service structure over the intervention time period (e.g., clinician absence, managerial change, changes to the pathway for managing referrals), fewer patients were offered psychological therapy than was anticipated: Based on data from 2013-2014, the service was expected to accept on average 9 new referrals per month; the service was unable to indicate precisely how many referrals were received in the periods 2014-2015 or 2015-2016, but stated anecdotally that they believed fewer referrals for therapy had been accepted. These factors represent barriers to implementing change.

2.4.2 Direct measures of service improvement

i. Does the information video improve patient knowledge and expectations about psychological therapy?

Five questionnaire booklets were returned during the intervention period. Two were returned without consent forms and, in accordance with the ethical approval for this study, the data from these booklets were not analysed. Of the 3 booklets returned with completed consent forms, only one included complete data. The remaining two were missing either some or all of the data from Sections 1-2 (i.e., the visual analogue scales) and all data from Section 3 (the qualitative component). Therefore, due to insufficient data, results from these questionnaires are not presented. Had sufficient data been collected within the timeframe, descriptive statistics would have been presented for Sections 1-2, with data from Section 3 evaluated using Thematic Analysis (Braun & Clarke, 2006).

ii. Does the information video improve engagement with services?

The five individuals who returned questionnaires between November 2015 and April 2016 were assumed to have viewed the information video. To understand whether the video facilitated engagement with services, attendance rates for their first six therapy appointments were compared with the attendance rates of five individuals who had accessed therapy one year earlier, by way of an audit. Those included in the comparison group were the first five individuals to have received psychological therapy during the period of November-April 2015. Basic demographic variables were examined (i.e. information gleaned from an electronic patient records system and not the information returned in questionnaires due to the incomplete consent forms), in addition to attendance rates over the first six sessions of therapy. Descriptive statistics are provided in Table 1.

Table 1. Audit of therapy attendance

	Video (N=5)	No video (N=5)
Gender		
N male (%)	2 (40%)	3 (60%)
N female (%)	3 (60%)	2 (40%)
Age		
Mean (SD)	58.40 (6.11)	34.00 (7.38)
Ethnicity		
%White - British	80%	60%
%White - Other background	0%	20%*
%Asian - Indian	20%	0%
Therapy attendance rate		
Mean (SD)	0.84 (0.15)	0.58 (0.27)

Note: *No ethnicity information available for one patient in the No Video group; Therapy attendance rates calculated as the percentage of scheduled appointments attended per patient, with mean rates of attendance presented in this table for those who viewed the video vs. those who did not; raw data are presented in Appendix I.

There were no significant group differences in terms of gender ($\chi^2 = 0.40$, exact $p = 1.00$), or ethnicity based on comparing the number of White British to non-White British participants in each group ($\chi^2 = 0.03$, exact $p = 1.00$), although there was a significant difference in age, with those in the video group older than those in the

comparison group (Mann Whitney: $U = 0.00$, $Z = -2.62$, $p = .008$). These results should be interpreted with caution, however, due to the very small sample sizes included in analyses: cell counts were below expected values for the χ^2 tests; and the p value obtained for the Mann Whitney U test was the lowest possible value that could be obtained when comparing two groups of $N=5$ (Foraro, 2016).

With regard to therapy attendance rates, the group that viewed the video appeared to attend a greater proportion of their initial therapy appointments, on average, when compared to the comparison group (84% attendance rate vs. 58% attendance rate); however this difference was not significant, Mann Whitney $U = 6.00$, $Z = -1.37$, $p = .004$. Again, this result should be interpreted with caution since the small sample sizes place a limit on the power to detect even large effects.

2.4.3 Indirect measures of improvement

Service improvement was also assessed indirectly, based on feedback received from clinicians, service users, and Trust Executives. Informal feedback from clinicians (i.e. comments made by clinicians to the research team) indicated that the video had met the service brief by providing information to patients. Clinicians also commented that they valued having a resource to share with patients. Some of the service users involved in Phases 1 and 2 of this project, and who therefore did not participate in Phase 3, also provided informal feedback (i.e. verbal comments) to a member of the research team stating that they found the video useful and informative. Trust Executives also responded favourably to the video based on feedback received after a showing of the video at a Quality Standards meeting and from a later showing of the video at a Service User conference, in which Trust Executives stated that the video appeared professional and engaging.

2.5 DISCUSSION

2.5.1 Main findings

The aim of the VIEW Project was to develop and evaluate an information video about psychological therapy. The need for this service improvement was identified by a group of service users (Cooper et al., 2016) and the video was developed in collaboration with service users and clinicians from a Therapies Team within a

CMHT. The VIEW project is therefore an example of service user involvement successfully leading to service change. It is also an example of successful partnership working between the NHS and the University of Bath, an academic institution that was responsible for video filming and editing. Overall, this video seems to have been well-received by the service, based on anecdotal feedback, and has resulted in a change in practice since all service users accessing psychological therapy are now provided with the opportunity to view an information video in advance, as opposed to relying solely on information leaflets.

The purpose of the video was to deliver information to patients about what to expect when attending psychological therapy. To determine whether the video met this brief, two research questions were identified. The first question asked whether the video improved patient knowledge and expectations about psychological therapy. This is consistent with the need to provide patients with sufficient information to make an informed decision about engaging in psychological treatment (Department of Health, 2009) and with literature linking knowledge about therapy to more accurate Process and Outcome Expectations during the course of treatment (Boettcher et al., 2013; Constantino et al., 2012; Greenberg et al., 2006; Webb et al., 2013). Due to insufficient data collection within the intervention period, it was not possible to determine whether the video improved expectations. There are a number of reasons why this might have occurred.

First, the service within which the video was created and piloted underwent a series of changes during the intervention period: the structure of the service had changed such that all therapists (e.g., physiotherapists, occupational therapists and psychological therapists) were now part of a single team; the service had become 'ageless' (i.e. it no longer catered for working age adults, but also older adults); a new team manager had been appointed; and a number of restrictions were placed on staff for financial reasons (e.g., staff were not permitted to order paper to print documents unless essential to their work, staff were not permitted to attend training events). These factors may have impacted on staff stress levels, staff availability and staff morale, limiting the extent to which they felt able to participate in or contribute to this project.

Second, the referral pathway within the service had changed during the intervention period. Referrals were not recorded or managed in the same way and

due to some long-term staff absences the service was unable to accept as many referrals as in the past (but was unable to provide precise figures in support of this claim). These changes may have led to fewer people being sent copies of the video than had been planned for during the development of this project.

Third, some factors may have prevented patients who were sent the video from returning questionnaires. Feedback from clinicians within the team suggests that some older patients did not have access to a DVD player and could therefore not view the video. Other patients had refused to complete the questionnaires as they had already received psychological therapy before and therefore felt that they were unsuitable participants for this project. Additionally, some of the patients who access the CMHT are acutely distressed or unwell, and might therefore feel unable to watch a video or complete questionnaires. It may also be that service users watched the video but were reluctant to provide formal feedback, possibly as a result of the power imbalance that exists within therapeutic settings. These are practical difficulties associated with conducting research within a CMHT.

The second question asked whether the information video improved patient engagement with the service. This is consistent with previous research identifying an association between accurate expectations for therapy and improved appointment attendance rates (Mitchell & Selmes, 2007; Norberg et al., 2011; Swift, Whipple, & Sandberg, 2012). An audit was conducted in which rates of therapy attendance were compared between individuals who had viewed the information video between November 2015 and April 2016, and those who had not viewed the video but had entered the service at the same time the previous year (November 2014 - April 2015). Although there was a trend towards greater attendance of appointments among those who had viewed the video, the results of statistical analyses were non-significant. This is a very preliminary finding that, whilst indicating the potential value of the video, also highlights how essential it is to obtain more data.

2.5.2 Limitations

The results of this project must be interpreted in the context of several limitations. Foremost is the very low response rate, which prevented the first research question from being answered and limited the extent to which the second question

could be addressed. Possible reasons for this low response rate have already been discussed and it will be important to continue data collection in order for the video to be evaluated fully.

A second limitation concerns the methods used to assess change in this study. The scale used to examine changes in patient knowledge and expectations was designed for the purposes of this study and therefore its psychometric properties are unknown. This can be addressed in future research by validating the scale used herein against other, previously validated measures. The audit conducted for the purposes of this study was also somewhat limited as it only examined very basic information on attendance rates, did not control for important covariates such as age, and only controlled for the effects of time by comparing patient attendance for those who viewed the video with attendance rates for patients admitted to the service one year previously. Such an approach is limited since contextual factors (e.g., changes in the service, different therapists) and intra-individual differences (e.g., age, previous experiences of therapy) may have confounded results. A more carefully controlled audit is therefore required in future. Were sufficient data available, a time-series analysis examining individual differences in attendance over successive sessions would be preferred.

Finally, a major source of bias in this project is in relation to the ethnicity of the sample - both in terms of those who appeared in the video (all of whom were white British) and those who evaluated the video (all but one of whom were identified as White based on audit data). This in part reflects the ethnic breakdown of the population found in Bath and North East Somerset, which is predominantly white British (90.1%; Office for National Statistics, 2011). However, this is at odds with other nearby localities served by the same Trust, notably Bristol, which is more ethnically diverse (77.9% White British; Office for National Statistics, 2011). It is also at odds with statistics concerning mental health and ethnicity, which indicate that minority ethnic groups are more likely to experience difficulties with their mental health (Bhui et al., 2003). It is possible that the ethnicity bias found in this project is simply a reflection of the ethnicity of participants who accessed the CMHT and this should be established in future research. Alternatively, individuals from minority ethnic groups may have felt reluctant to engage with a service that is predominantly staffed by white British clinicians, or may have found that culture or language were barriers to engagement. The ethnicity bias is likely to limit the

extent to which the video can be used across AWP Trust, meaning the video will likely require amendment in future so as to fully represent the ethnic and cultural diversity of service users.

2.5.3 Future directions

The need for future research to assess the impact of the video has already been described. This is currently being implemented by the service, which is continuing to collect feedback on the video using the questionnaire booklet described in this study, and which is now keeping a record of patients who have seen the video to facilitate future audit and evaluation.

To improve access to the video, the service is now requesting that care coordinators help patients to watch the video prior to referring them for psychological therapy. This may help more marginalised groups of patients (e.g., older patients who may not have access to technology, people with more severe or enduring mental health difficulties) to access the video, helping them to make an informed decision about accessing psychological therapy prior to being referred. Relatedly, the service also plans to host the video on the trust's YouTube channel in future, which will allow patients who do not own a DVD player to access the video using more modern technology (e.g., laptops, smart phones, tablets). Future research therefore should focus on understanding the accessibility of the video, to determine not only whether the video is of benefit to patients but also whether they choose to/ are able to make use of it. This could identify unforeseen barriers to accessing psychological therapies within the community, thereby leading to additional recommendations for service improvement in future.

Additional research could also take an experimental approach, for example by comparing individuals who receive the video to those who receive a paper-only leaflet; or by examining knowledge and beliefs about therapy before and after viewing the video using a within-subjects design. Importantly, the service could develop an updated paper leaflet that includes all of the information in the video: By comparing this leaflet and the video, the service could establish what (if any) added benefit is associated with having an information video versus having a leaflet only.

Another area of future research concerns health economics and the cost implications associated with video information. In this study the video was produced at low financial cost owing to partnership working between the NHS and University of Bath. However, the video was expensive in terms of resources, most notably time. Future research should therefore examine costs and balance them against potential savings to trusts: Recent figures indicate that missed outpatient appointments cost on average £108 per appointment (NHS England, 2014); although the extent to which these estimates apply to psychological therapies services is unclear, it is likely that this video would prove cost effective if it improved therapy attendance rates.

2.5.4 Conclusions

This service improvement project report describes the development and evaluation of an information video about psychological therapy. The video was developed based on collaborative work with service users and clinicians from an NHS CMHT and with a University Audio Visual Unit. Anecdotally, the information video was well received by services users and staff; however it was not possible to evaluate the extent to which the video improved knowledge or expectations about psychological therapy due to an extremely small sample size. An audit of therapy attendance rates indicated that individuals who viewed the video did not attend more appointments than individuals who had not viewed the video, suggesting no impact of the video on therapeutic engagement; however these results were also limited by the extremely small sample size for this project.

2.5.5 Reflections

This project was an enormous undertaking. I could never have anticipated how difficult it would be to identify service users and clinicians to provide feedback during the stakeholder consultation, how long it would take to develop the video, or how few people would provide feedback on the video during the data collection period. Were I to undertake a similar project in future I would certainly look to manage the project and my own time differently. It is likely that this project would have been easier were I embedded within the team in which the video was created, although my Clinical Supervisor was an enormous source of support. Yet in spite of these limitations, I believe the project was a success. I have created

something tangible and, I think, meaningful that the service and the individuals who access it can now use. I was moved by the accounts of the people (especially those with personal experience) who graciously consented to attend focus groups and appear in the video itself. This project is more theirs than mine.

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CHAPTER 3: MAIN RESEARCH PROJECT

Project title:

Social anxiety among adults with ADHD: A result of cognitive bias?

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3.1 ABSTRACT

Background: Around 30% of adults with attention-deficit/hyperactivity disorder (ADHD) also experience clinical levels of social anxiety, yet no studies have sought to fully understand the extent to which a cognitive model of social anxiety can be applied in this population.

Aims: This study aimed to test the cognitive theory of social anxiety in ADHD.

Methods: An online questionnaire was used to examine social anxiety cognitions, safety-seeking behaviours, wellbeing and impairment among 86 adults: 23 adults with ADHD who scored high for social anxiety (ADHD+SA), 5 adults with ADHD who scored low for social anxiety (ADHD-SA), 36 adults without ADHD who scored high for social anxiety (Control+SA), 22 adults without ADHD who scored low for social anxiety (Control-SA). The ADHD-SA group was excluded from some analyses due to the small sample size.

Results: The ADHD+SA group scored significantly higher than both comparison groups (Control+SA, Control-SA) for frequency of negative cognitions about social situations, belief in negative cognitions about social situations, use of safety-seeking behaviours in social situations and functional impairment. However, there was no difference in wellbeing between the ADHD+SA and Control+SA groups, suggesting that social anxiety is a more prominent determinant of wellbeing than is ADHD. Within the entire sample (N=86), regression analyses additionally indicated an association of inattentive ADHD symptoms with the frequency of social anxiety cognitions but not with use of safety-seeking behaviours.

Conclusions: Overall, these results suggest that a cognitive model of social anxiety can be applied when working with adults with ADHD who also experience social anxiety.

Key words: ADHD; Social Anxiety; Cognitive Behaviour Therapy (CBT); Psychological Wellbeing, Functional Impairment; Adults.

3.2 INTRODUCTION

3.2.1 Background

Attention-Deficit/Hyperactivity Disorder (ADHD) begins in childhood but persists into adulthood in up to two thirds of cases (Faraone, Biederman, & Mick, 2006) with an estimated adult prevalence of roughly 3% (Simon, Czobor, Bálint, Mészáros, & Bitter, 2009). The primary symptoms are inattention (e.g., poor organisation/planning) and hyperactivity/impulsivity (e.g., restlessness, speaking/acting without thinking). These symptoms operate on a continuum with extreme levels indicative of ADHD (Frazier, Youngstrom, & Naugle, 2007). ADHD is associated with high rates of comorbidity and it is estimated that up to 30% of those diagnosed experience social anxiety disorder (Kessler et al., 2006), a persistent fear of social or performance situations in which an individual believes they will act in a way that is humiliating or embarrassing. This is higher than the estimated 12% prevalence of social anxiety disorder among the general population (Kessler et al., 2005).

3.2.2 The cognitive theory of social anxiety disorder

According to the cognitive model of social anxiety (D.M. Clark & Wells, 1995), individuals develop negative assumptions about themselves and their social world based on early life experiences (e.g., bullying, negative social interactions), including excessively high standards for social performance, conditional beliefs about the consequences of social performance, and unconditional negative beliefs about the self. As a result of these assumptions, individuals appraise salient social situations as dangerous, leading to feelings of anxiety, behavioural avoidance, safety-seeking behaviours intended to prevent a feared outcome, and an internal focus of attention that leads to biased interpretations of one's own social performance (Clark, 2005). These factors serve to maintain social anxiety over time. Cognitive-behavioural therapy (CBT) therefore seeks to challenge negative beliefs and assumptions and to reduce the use of avoidance and safety-seeking behaviours, in order to alleviate distress. Clinical trials indicate that CBT is an effective intervention for social anxiety (D. M. Clark et al., 2006; Gould, Buckminster, Pollack, Otto, & Massachusetts, 1997; Leichsenring et al., 2013) and

it is for this reason that CBT is recommended for the treatment of social anxiety disorder (NICE, 2013).

3.2.3 Theories of social anxiety among adults with ADHD

ADHD is associated with deficits across a number of neuropsychological domains (for review see Johnson et al., 2009). Consequently, the majority of research into social anxiety and ADHD has taken a neuropsychological perspective, but has failed to identify a single profile of neuropsychological impairment that can adequately account for the development or maintenance of social anxiety symptoms (e.g., Jarrett and Ollendick, 2008; Schatz and Rostain, 2006). A biopsychosocial approach to understanding ADHD is therefore advocated and cognitive-behavioural theories have emerged that highlight the importance of cognitions and behaviours in maintaining the difficulties associated with adult ADHD.

Young and Bramham (2012) propose that the neuropsychological deficits present in ADHD lead to successive failures across the lifespan, which activate negative appraisals, safety-seeking behaviours, negative beliefs and emotional distress. This model is used to explain the high prevalence of social anxiety among adults with ADHD: Individuals with ADHD behave inappropriately in social situations due to neuropsychological deficits (e.g., poor inhibition leads to interrupting others or make socially unacceptable comments) and as a result they experience repeated failures during social interactions. This leads to negative appraisals of subsequent social situations, an increase in feelings of anxiety, and the use of safety-seeking behaviours and avoidance. The Young-Bramham model therefore states that individuals with ADHD experience social anxiety primarily as a result of genuine, as opposed to perceived, deficits in social skills. This is different from Clark and Wells' cognitive theory (1995), which argues that individuals with social anxiety do not have deficient social skills *per-se* and instead perform poorly in social situations due to their use of safety-seeking behaviours and self-focussed attention.

A few studies have examined negative cognitions among adults with ADHD (Brown, Katz, Roth, & Beers, 2014; Mitchell, Benson, Knouse, Kimbrel, & Anastopoulos, 2013; Reid, Merwood, Skirrow, & Asherson, in preparation;

Strohmeier, 2013), although only one has looked specifically at social anxiety cognitions (Abramovitch & Schweiger, 2009). This study compared adults with ADHD to controls, finding that adults with ADHD scored significantly higher for symptoms of Social Worry and Meta-Worry on the Anxious Thoughts Inventory (Wells, 1994) and for intrusive thoughts on all subscales of the Distressing Thoughts Questionnaire (D. A. Clark & de Silva, 1985). In this study, adults with ADHD were selected for being free from comorbidity, suggesting that simply having ADHD is associated with higher rates of negative cognitions, including those related to social performance. Based on these findings, adults with ADHD might be expected to score more highly than adults without ADHD for social anxiety cognitions and behaviours *regardless* of whether they have a comorbid social anxiety disorder. However, Abramovitch & Schweiger (2009) did not examine groups who were high versus low in social anxiety, nor did they examine use of safety-seeking behaviours.

3.2.4 Wellbeing and impairment

The functional impact of adult ADHD is well documented and includes difficulties participating in higher education, employment and sustaining stable relationships (Asherson, 2005). Similar impairments are also described for individuals with social anxiety (Schneier et al., 1994). ADHD and social anxiety are also associated with low subjective wellbeing (Gudjonsson, Sigurdsson, Eyjolfsson, Smari, & Young, 2009; Ozturk & Mutlu, 2010). As the result of a 'double-whammy' effect, adults with ADHD and social anxiety may therefore experience greater functional impairments and lower wellbeing relative to adults with either ADHD or social anxiety only.

3.2.5 Research objectives

In summary the cognitive-behavioural mechanisms linking social anxiety with ADHD in adults remain poorly understood, as does the wider impact of ADHD and social anxiety on functioning and wellbeing. Consequently, the present study had three main aims, as described in Table 1. A related, qualitative study is also being undertaken by the authors to garner rich descriptions of how adults with ADHD experience and cope with social anxiety, to be the subject of a separate publication.

Table 1. Major aims and hypotheses of this study

Aims and hypotheses	
1	To compare adults with ADHD who scored high for social anxiety (ADHD+SA), adults with ADHD who scored low for social anxiety (ADHD-SA), adults without ADHD who scored high for social anxiety (Control+SA) and adults without ADHD who scored low for social anxiety (Control-SA), in order to determine the frequency and intensity of social anxiety cognitions and behaviours. Consistent with the cognitive mode of social anxiety and the broader literature on social anxiety in ADHD,, a unidirectional hypothesis stated that those in the ADHD+SA group would show the greatest levels of negative cognitions and behaviours, followed by those in the Control+SA group, those in the ADHD-SA group, and finally those in the Control-SA group. The ADHD+SA group was hypothesised to score highest in these domains because the presence of social anxiety should be characterised by the presence of negative and safety-seeking behaviours, and because those with ADHD are expected to have had more adverse social experiences as a result of their ADHD symptoms. The Control+SA group was hypothesised to score higher than the ADHD-SA group because the presence of negative cognitions and behaviours in social situations should be primarily associated with social anxiety as opposed to ADHD, while a difference between the ADHD+SA and ADHD-SA groups would indicate that cognitions and behaviors are the strongest predictor of social anxiety among those with ADHD, thereby supporting the cognitive model of social anxiety. Finally, the ADHD-SA group should score higher than the Control-SA group if the presence of ADHD is associated with more adverse social experiences.
2	To compare the same groups for psychological wellbeing and functional impairment, to determine whether the presence of ADHD with comorbidity has the greatest impact on overall wellbeing. A unidirectional hypothesis stated that those in the ADHD+SA group would have the highest levels of functional impairment and lowest levels of wellbeing, followed by those in the Control+SA group, those in the ADHD-SA group, and those in the Control-SA group, with significant between-groups differences. The Control+SA group was hypothesised to have lower wellbeing/ higher impairment than the ADHD-SA group due to the range of avoidance behaviours that accompany social anxiety, while the ADHD-SA group was hypothesised to have lower wellbeing/ higher impairment than the Control-SA group due to the known association of ADHD with lower overall wellbeing.
3	To examine continuous associations between ADHD and social anxiety symptoms, to determine whether ADHD symptom severity is associated with greater levels of social anxiety cognitions and behaviours. A unidirectional hypothesis specified that there would be a positive association of ADHD symptoms with greater levels of cognitions and behaviours, consistent with research suggesting that ADHD symptoms lead to worse performance in social situations. No specific hypotheses were made with regard to the ADHD symptom dimensions of inattention vs. hyperactivity/impulsivity, although these dimensions were examined separately in accordance with research highlighting a partial separation of the two ADHD symptom domains (Toplak et al., 2009).

3.3 METHOD

3.3.1 Design and procedure

This study used a mixed-methods approach to collect quantitative and qualitative data. This article deals with the quantitative arm of the study only, which used a between-subjects design to compare adults with and without ADHD classified as either high or low in social anxiety, who completed a number of psychometric measures via an online questionnaire. Full details of the procedures are presented as supplementary materials (Appendix K). The study protocol was reviewed and approved by the University of Bath Psychology Ethics Committee and the NHS East of Scotland Research Ethics Service (Appendix L). All procedures fully complied with the ethical standards of these committees and with the Helsinki Declaration of 1975, as revised in 2013.

3.3.2 Sample and recruitment

Adults with ADHD:

Thirty-three adults with ADHD were recruited. Eleven (33.3%) were directly recruited via one of three adult ADHD clinics based in the UK by providing those attending routine clinic appointments with the information sheet and a unique URL and password for accessing the Internet-based questionnaire. A further 22 adults with ADHD (66.6%) were recruited via an Internet social media campaign, in which the study information and a URL were shared via email, Facebook and Twitter. Adults with ADHD were eligible to participate if they met the core study inclusion criteria (aged ≥ 18 years, no history of autism spectrum disorder or acquired brain injury) and if they had a current diagnosis of ADHD. After excluding those who reported that they did not have a current, clinical diagnosis of ADHD ($n=2$) and those with missing data ($n=3$; Section 3.3.4), a final sample of $N=28$ adults with ADHD were included. The majority ($n=26$, 92.9%) reported receiving their ADHD diagnosis in adulthood, with the remainder diagnosed in childhood. Twenty-two adults (78.6%) were taking medication for ADHD at the time of participation. At the time of testing 25 individuals in the ADHD group (89%) scored in the clinical range for ADHD symptoms on the Barkley Adult ADHD Rating Scales (see Section 3.3.3); those who scored below clinical range were not excluded from analyses as all were taking ADHD medication intended to reduce their ADHD symptoms.

Adults without ADHD:

Sixty-seven adults without ADHD were recruited to this study. Forty-four (65.7%) were recruited via the University of Bath Psychology Research Participation Scheme, in which undergraduate psychology students participate in research in exchange for course credits. A further 23 adults without ADHD (34.3%) were recruited via social media as per the adults with ADHD. After data collection, nine exclusions were made in accordance with the study inclusion/exclusion criteria: Four adults were excluded as they indicated that they had taken medication for ADHD as a child ($n=2$) or scored in the clinical range for ADHD symptoms on the Barkley Adult ADHD Rating Scales administered as part of the Internet-based questionnaire ($n=2$; see Section 3.3.3); five adults were excluded due to missing data (Section 3.3.4). This resulted in a final sample of $N=58$ adults without ADHD.

Classification of social anxiety:

Participants with and without ADHD were classified as either high or low in social anxiety according to the published cut-off score on the Liebowitz Social Anxiety Scale (Section 3.3.3). Of the adults with ADHD, $N=23$ were classified as high social anxiety (ADHD+SA) and $N=5$ were classified as low social anxiety (ADHD-SA). Among the adults without ADHD, $N=36$ were classified as high social anxiety (Control+SA) and $N=22$ were classified as low social anxiety (Control-SA). Demographic characteristics of the four groups are presented in Table 2. There were significant group differences in age (Kruskal-Wallis $H(3) = 32.85, p < .001$) and in education level when comparing those educated to UK degree level or higher to those educated below this level (Fisher's Exact $\chi^2=8.33, p=.034$). However, there were no significant group differences in gender (Fisher's Exact $\chi^2=9.31, p=.089$), ethnicity when comparing the ratio of White British to non-White British individuals (Fisher's Exact $\chi^2=0.95, p=.850$) or in levels of unemployment when compared to other occupational categories (Fisher's Exact $\chi^2=2.51, p=.459$).

Power:

A-priori and *post-hoc* power calculations were conducted using *G*Power* (Faul, Erdfelder, Lang, & Buchner, 2007), to determine the requisite sample sizes to detect small, medium and large effects. Details are presented in Appendix M and indicate that this study was sufficiently powered to detect large effects.

Table 2. Demographic characteristics of adults with and without ADHD

	Control-SA (N=22)	Control+SA (N=36)	ADHD-SA (N=5)	ADHD+SA (N=23)
Age: M (SD)	22.82 (6.57)	22.94 (9.84)	29.40 (6.47)	39.04 (10.77)
Gender: N (%)				
Female	8 (86.4%)	31 (86.1%)	2 (40.0%)	17 (73.9%)
Male	3 (13.6%)	5 (13.9%)	2 (40.0%)	5 (21.7%)
Other	-	-	1 (20.0%)	1 (2.3%)
Ethnicity: N (%)				
British	15 (68.2%)	29 (80.6%)	5 (100.0%)	19 (82.6%)
Irish	1 (4.5%)	1 (2.8%)	-	-
Indian	-	1 (2.8%)	-	-
Chinese	-	1 (2.8%)	-	1 (4.3%)
Caribbean	1 (4.5%)	-	-	-
Other	5 (22.7%)	4 (11.1%)	-	3 (13.0%)
Education level: N (%)				
No formal qualifications	-	-	-	1 (4.3%)
GCSE	-	1 (2.9%)	-	4 (17.9%)
A-level	10 (45.5%)	20 (57.1%)	1 (20.0%)	3 (13.0%)
Degree	3 (13.6%)	4 (11.4%)	2 (40.0%)	6 (26.1%)
Postgraduate	6 (27.3%)	4 (11.4%)	1 (20.0%)	7 (30.4%)
Other	3 (13.6%)	6 (17.1%)	1 (20.0%)	2 (8.7%)
Employment: N (%)				
Full-time employed	7 (31.8%)	9 (25.0%)	2 (40.0%)	9 (39.1%)
Part-time employed	3 (13.6%)	3 (8.3%)	1 (20.0%)	6 (26.1%)
Self-employed	-	1 (2.8%)	1 (20.0%)	1 (4.3%)
Unemployed	3 (13.6%)	3 (8.3%)	-	3 (13.0%)
Retired	-	1 (2.8%)	-	-
Full-time education	9 (40.9%)	19 (52.8%)	1 (20.0%)	1 (4.3%)
Other	-	-	-	3 (13.0%)

Note: for education level n=1 individual from the Control+SA group was missing data; details of 'Other' classifications are available from the author upon request.

3.3.3 Measures

Six measures were included in the online questionnaire, in addition to demographic questions used to gather descriptive information about sample. All measures were judged to have internal consistency that was acceptable, good or excellent in the present sample (Appendix N).

The Barkley Adult ADHD Rating Scale (BAARS):

The BAARS (Barkley, 1997) is a measure of the 18 ADHD symptoms outlined in DSM-IV/DSM-5. It has good psychometric properties among adults with and without ADHD (Skirrow & Asherson, 2013). Two self-report versions were administered in the present study: An adult symptom scale, on which respondents rated the presence of ADHD symptoms over the past six months; and a childhood symptom scale, on which respondents retrospectively rated the presence of symptoms between 7-12 years of age. Both versions yield total scores for inattention (IA; 9-items) and hyperactivity/impulsivity (HI; 9-items). Items are rated on a Likert scale scored 0-4, where higher scores indicate greater symptom severity. An item score of 3-4 indicates the presence of a clinically significant symptom and in accordance with DSM-5 criteria, a count of six or more clinically significant symptoms of either HI or IA in childhood *and* 5 or more symptoms of HI or IA in the last six months was used to screen the control sample for possible cases of ADHD. Using these criteria, the BAARS has been found to have low sensitivity (37.9%) but high specificity (96.3%) indicating that ADHD is likely to be under-diagnosed when relying on this measure (Young et al., 2016). Accordingly, the BAARS was primarily used to measure of ADHD symptomatology and for the main analyses two, aggregate ADHD variables were created by taking the mean of child and adult symptom scale scores separately for the domains of IA and HI. This was in order to capture trait-like, *lifetime* symptoms of ADHD (Appendix O).

The Leibowitz Social Anxiety Scale (LSAS):

The LSAS (Heimberg et al., 1999; Safren et al., 1999) is a 24-item self-report scale used to measure anxiety in relation to performance and social situations. Items are rated on a Likert scale scored 0-4, where higher scores indicate greater severity of symptoms. The scale yields scores for Fear and Avoidance of each situation specified, in addition to a Total score. Only Total LSAS scores were examined in the present study. The LSAS has good psychometric properties and research has identified a Total score ≥ 30 as a cut-off for the detection of clinical levels of social anxiety symptoms, providing sensitivity of around 93% and specificity of 94% (Mennin et al., 2002; Rytwinski et al., 2009).

The Social Cognitions Questionnaire (SCQ):

The SCQ (Wells, Stopa and Clark, 1993, as cited in D.M. Clark, 2005) is a 22-item self-report measure used to assess Frequency of and Belief in negative cognitions

related to social situations. The SCQ has been used in previous studies of social anxiety and is reported to have acceptable psychometric properties including good internal consistency and test-retest reliability (Hodson, McManus, Clark, & Doll, 2008; McManus, Sacadura, & Clark, 2008). The Frequency scale is rated on a Likert scale scored 1-5 and yields a total score ranging from 22-110. Belief is rated on an 11-point scale, on which participants are required to indicate their level belief in each statement from 0-100%. Total Belief score was calculated as an individual's mean level of belief across all 22 items.

The Social Behaviours Questionnaire (SBQ):

The SBQ (D.M. Clark, 2005) is a 28-item self-report measure used to assess the presence and severity of safety behaviours commonly found among individuals with social anxiety. Items are rated on a four-point Likert scale scored 0-3, with ratings summed to yield a total score ranging from 0-84. The scale was developed for use in clinical settings and acceptable psychometric properties have been identified in social anxiety populations (Hodson et al., 2008; McManus et al., 2008).

The Warwick-Edinburgh Mental Well-being Scale (WEMWBS):

The WEMWBS is a 14-item self-report measure of general wellbeing, with good psychometric properties (Tennant et al., 2007). Items are rated on a five-point Likert scale scored 1-5, with scores across items summed to generate a total score. Lower scores on the WEMWBS have been found to correlate with higher scores for anxiety and depression, but unlike measures of psychopathology the WEMWBS captures the normal distribution of wellbeing (i.e. high as well as low wellbeing).

The Weiss Functional Impairment Rating Scale (WFIRS):

The WFIRS (Weiss, 2010) is a 68-item questionnaire used to assess life functioning across seven domains: Family, Work, Education, Life Skills, Self Concept, Social Functioning and Risky Activities. For the purposes of this study the Self Concept scale was not administered due to content overlap with other measures. Items from the WFIRS are rated on a four-point Likert scale scored 0-3, on which higher scores indicate greater levels of impairment. In accordance with scoring criteria, this study examined total level of functional impairment, calculated as the mean of responses to all completed items (the mean is used since items

can be rated as “*not applicable*” where required). Previous validation studies have identified good psychometric properties for the WFIRS (Weiss, 2010).

3.3.4 Statistical analysis

Full details of the statistical procedures, including the missing data strategy, are provided as supplementary materials (Appendix O). Unless otherwise stated all analyses used univariate general linear models, implemented as regressions with robust standard errors in Stata (StataCorp, 2013). This approach uses Huber-White Sandwich estimators to generate standard errors robust to deviations from normality, outliers and heteroscedasticity (Acock, 2012; Williams, 2000) allowing untransformed data to be used even where there were deviations from normality and/or heterogeneity of variances across groups.

To test hypotheses 1 and 2, the following groups were compared: Control-SA, Control+SA and ADHD+SA. The ADHD-SA group was not included due to a small sample size (N=5). Each of five dependent variables was regressed on the covariates age and gender (with gender dummy-coded to compare females with non-females) and on group status (dummy coded to allow planned contrasts between the three groups in accordance with hypotheses; Field, 2009). The main effect was assessed using the *F*-ratio statistic, with the individual effects of covariates and planned contrasts assessed using the *t*-statistic. Effect size was assessed according to Cohen (1988). To test hypothesis 3, the linear association between ADHD symptoms and social anxiety cognitions and behaviours was examined in the entire sample (N=86). Due to high levels of correlation between the dependent variables (Appendix O), regressions were only performed on SCQ Frequency and SBQ Total scores. These variables were regressed on lifetime ADHD symptoms (IA & HI) and the covariates gender and age. Model fit was assessed using the *F*-ratio and R^2 statistics, the association of each independent variable with the dependent variable was assessed using the *t*-statistic, and the unique proportion of variance explained by each independent variable was assessed using semi-partial R^2 (sR^2). Seven univariate models were fit to the data as part of the main analyses: A Bonferroni correction was therefore applied, with the adjusted threshold $p < .007$ used to denote significance at the $\alpha = 0.05$ level.

3.4 RESULTS

3.4.1 Descriptive statistics

Descriptive statistics are presented in Table 3.

Table 3. Descriptive statistics for main measures by group and for whole sample

	Mean (SD)				
	Control-SA (N=22)	Control+SA (N=36)	ADHD-SA (N=5)	ADHD+SA (N=23)	Total (N=86)
BAARS Adult - IA	3.86 (2.61)	5.08 (4.21)	14.80 (4.21)	19.73 (4.97)	9.26 (7.92)
BAARS Adult - HI	4.00 (3.09)	4.67 (3.71)	16.20 (4.32)	16.39 (4.67)	8.30 (6.80)
BAARS Child - IA	2.18 (2.30)	3.72 (3.29)	24.2 (3.42)	20.26 (6.72)	8.94 (9.47)
BAARS Child - HI	3.32 (3.36)	4.06 (3.77)	22.00 (7.68)	16.17 (7.15)	8.15 (8.16)
BAARS Life - IA	3.02 (1.77)	4.40 (3.35)	19.50 (1.41)	20.00 (4.26)	9.10 (8.22)
BAARS Life - HI	3.66 (2.87)	4.36 (3.32)	19.10 (5.10)	16.28 (4.83)	8.23 (7.08)
LSAS	19.23 (7.79)	55.47 (17.86)	19.80 (10.16)	77.61 (24.57)	50.05 (28.72)
SCQ - Frequency	38.41 (10.95)	59.25 (13.66)	42.20 (10.08)	72.87 (12.82)	56.57 (18.08)
SCQ - Belief	2.85 (1.61)	5.20 (1.95)	3.95 (1.82)	6.63 (3.69)	4.91 (2.30)
SBQ	17.59 (9.92)	33.17 (11.21)	17.60 (7.27)	42.74 (10.68)	30.84 (14.33)
WEMWBS	51.23 (8.61)	43.42 (8.03)	48.00 (2.74)	38.52 (8.76)	44.37 (9.36)
WFIRS	0.25 (0.18)	0.54 (0.37)	0.90 (0.51)	1.37 (0.39)	0.71 (0.55)

Note: BAARS = Barkley Adult ADHD Rating Scale; IA = inattentive symptoms; HI = hyperactive/impulsive symptoms; Life = lifetime ADHD symptoms derived from mean of child and adult IA & HI symptoms; LSAS = Liebowitz Social Anxiety Scale; SCQ = Social Cognitions Questionnaire; SBQ = Social Behaviours Questionnaire; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; WFIRS = Weiss Functional Impairment Rating Scale; descriptive statistics for all measures are based on raw data.

Mean scores for the ADHD+SA and Control+SA groups appear higher than those for the Control-SA group across most measures; the exception being the WEMWBS, on which higher scores indicate greater wellbeing. Similarly, the ADHD+SA group appears to score higher than the Control+SA group for the majority of measures. Standard deviations appear similar across groups for some measures (e.g., the WEMWBS) but not others (e.g., the LSAS Avoidance scale), consistent with the identified heterogeneity of variances.

3.4.2 Social anxiety symptoms

Prior to undertaking the main analyses, the three groups were compared for levels of social anxiety on the LSAS. Consistent with the group classification process, the Control-SA group scored significantly lower for social anxiety symptoms than the Control+SA group (Mann Whitney: $U=0.00$, $Z=-6.35$, $p<.001$) and the ADHD+SA group (Mann Whitney: $U=0.00$, $Z=-5.75$, $p<.001$). Additionally, the Control+SA group scored significantly lower than the ADHD+SA group (Mann Whitney: $U=191.50$, $Z=-3.46$, $p=.001$). This potential confound should be considered when interpreting all subsequent results.

3.4.3 Social anxiety cognitions and behaviours

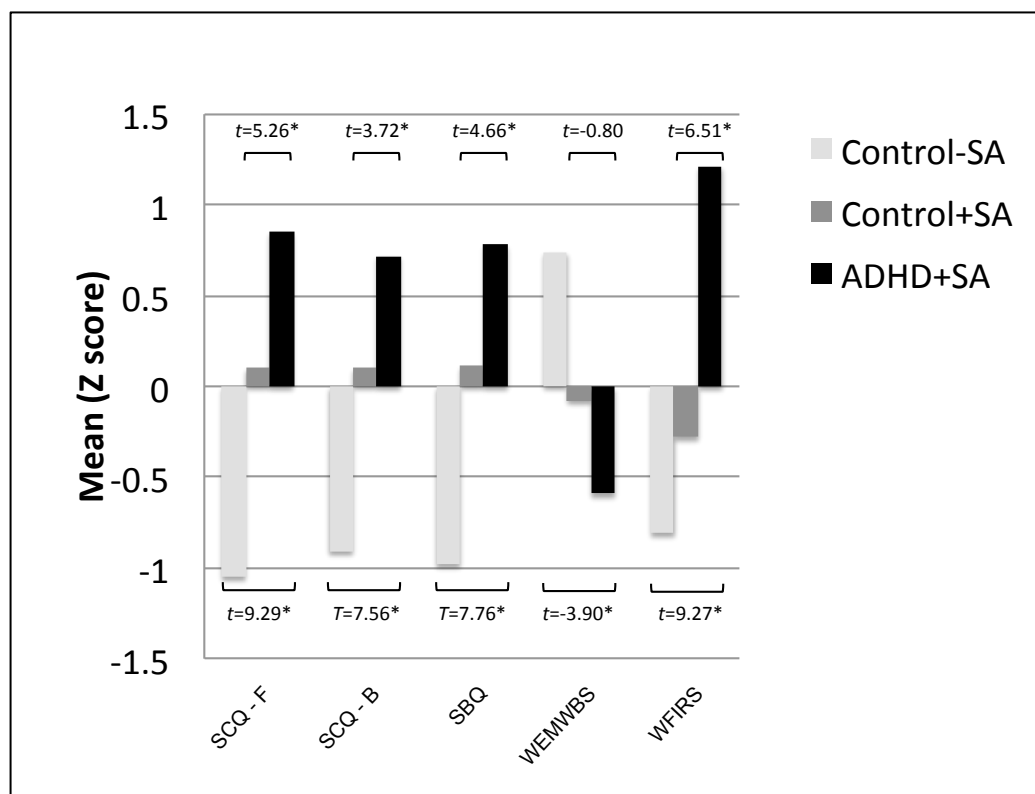
Results of the univariate general linear models are presented in Table 4 and Figure 1. There was a significant main effect of group on SCQ Frequency of negative cognitions while controlling for gender and age, $F(4, 76)=28.28$, $p<.001$, Cohen's $f^2=1.33$. Planned contrasts revealed that the Control+SA and ADHD+SA groups scored significantly higher than the Control-SA group, and that the ADHD+SA group scored significantly higher than the Control+SA group. There was also a significant main effect of group on SCQ Belief in negative cognitions, $F(4, 76)=16.24$, $p<.001$, $f^2=0.75$. The Control+SA and ADHD+SA groups scored significantly higher than the Control-SA group, and the ADHD+SA group scored significantly higher than the Control+SA group. Finally, there was a significant main effect of group on use of safety-seeking behaviours, $F(4, 76)=21.10$, $p<.001$, $f^2=0.96$. The Control+SA and ADHD+SA groups scored significantly higher than the Control-SA group, and the ADHD+SA group scored significantly higher than the Control+SA group. There were large effect sizes (d) throughout.

Table 4. Results hierarchical regression models predicting social anxiety by child and adult ADHD symptoms

	SCQ - F			SCQ - B			SBQ			WEMWBS			WFIRS		
	<i>t</i>	<i>p</i>	<i>d</i>	<i>t</i>	<i>p</i>	<i>d</i>	<i>t</i>	<i>p</i>	<i>d</i>	<i>t</i>	<i>p</i>	<i>d</i>	<i>t</i>	<i>p</i>	<i>d</i>
Gender	1.08	.284	-	1.69	.095	-	0.65	.517	-	-0.90	.369	-	-0.86	.395	-
Age	-3.12	.003*	-	-2.48	.016	-	-2.43	.017	-	-0.90	.339	-	-0.56	.579	-
Contrast 1	9.29	<.001*	2.14	7.56	<.001*	1.62	7.76	<.001*	1.84	-3.90	<.001*	1.17	9.27	<.001*	1.79
Contrast 2	5.26	<.001*	1.12	3.72	<.001*	0.79	4.66	<.001*	0.91	-0.80	<.425	0.59	6.51	<.001*	2.44

Note: Contrast 1 compares the Control-SA group to the Control+SA and ADHD+SA groups simultaneously, to test the effect of having social anxiety; Contrast 2 compares the ADHD+SA group to the Control+SA group to test the added influence of having ADHD; *t* = *t*-test statistic; *d* = Cohen's *d*, an estimate of effect size for the comparison of mean scores in group contrasts, where $d \geq 0.2$ = small, $d \geq 0.5$ = medium, and $d \geq 0.8$ = large; *denotes significance at the adjusted level of $p < .007$; SCQ = Social Cognitions Questionnaire - Frequency (F) or Belief (B) scales; SBQ = Social Behaviours Questionnaire; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; WFIRS = Weiss Functional Impairment Rating Scale.

Figure 1. Comparison of mean scores for social anxiety cognitions and behaviours, wellbeing and functional impairment by group.



Note: SCQ-F = Social Cognitions Questionnaire - Frequency of negative cognitions; SCQ-B = Social Cognitions Questionnaire - Belief in negative cognitions; SBQ = Social Behaviours Questionnaire total use of safety-seeking behaviours; WEMWBS = Warwick-Edinburgh Mental Wellbeing Scale - total wellbeing score; WFIRS = Weiss Functional Impairment Scale - total score; t = t -test statistic comparing Control-SA with Control+SA and ADHD+SA groups (lower section), or Control+SA with ADHD+SA group (upper section); *denotes significance at $p < .007$ level; standardised data (z scores) presented to facilitate comparisons across measures.

To understand the prevalence of different cognitions and behaviours among adults with ADHD and high levels of social anxiety, the SCQ and SBQ scales were examined in greater detail. Items from the SCQ were rank ordered based on responses to the Frequency scale, such that the highest-ranking items were those endorsed most frequently by adults from the ADHD+SA group. The two most frequently endorsed cognitions were *'I am inadequate'* and *'I am weird/different'*. The exercise was repeated for scores on the SBQ and the two most frequently used safety-seeking behaviours were *'making an effort to come across well'* and *'trying to act normal'*. Full lists of rank-ordered cognitions and behaviours are provided in Appendix P and depicted as a Word Cloud in Figure 2.

Figure 2. Word Clouds depicting cognitions and behaviours for the ADHD+SA group.

Figure 2A. Cognitions about social situations

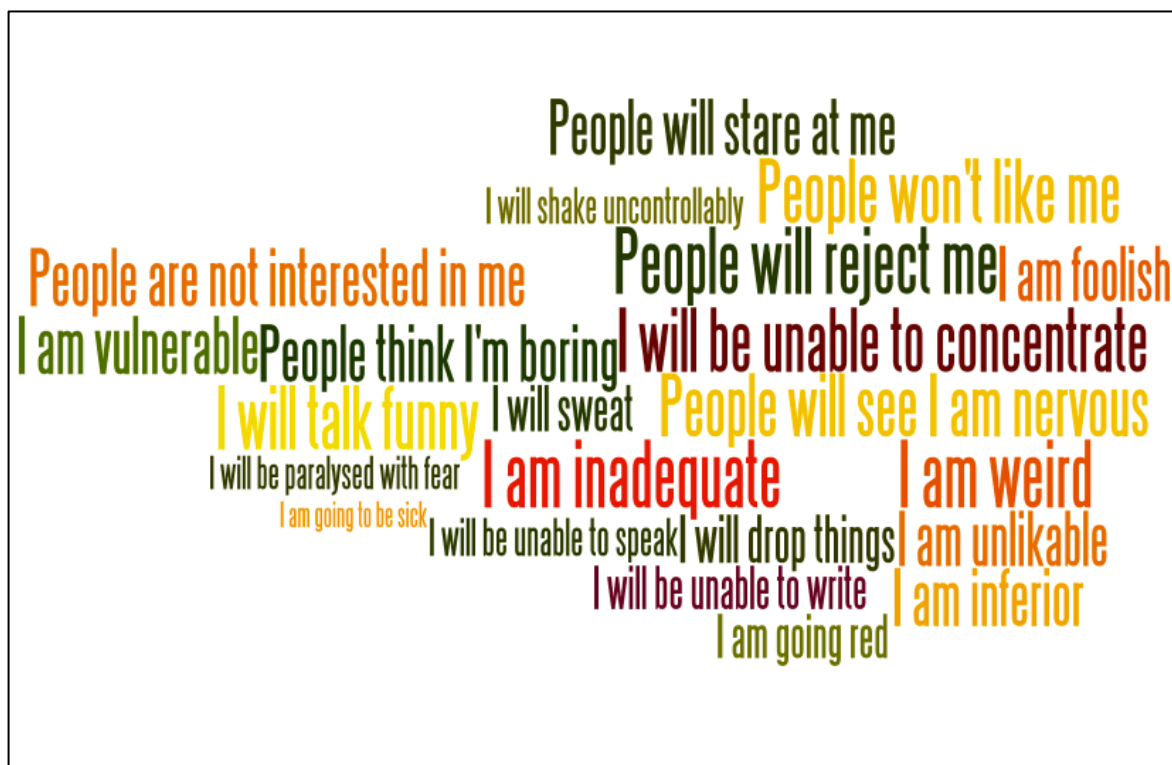
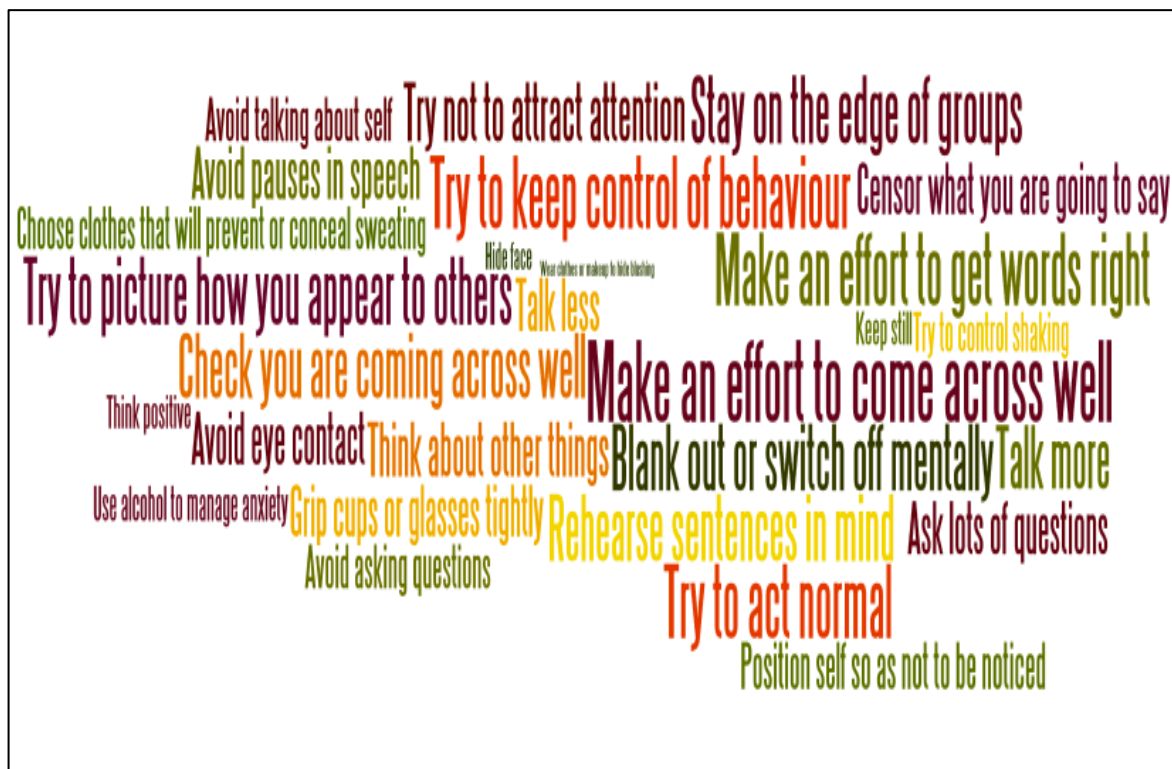


Figure 2B. Safety-seeking behaviours used in social situations



Note: The size of each phrase corresponds to the frequency with which each item was endorsed on either the Social Cognitions Questionnaire - Frequency Scale (Figure 2A) or the Social Behaviours Questionnaire - Total scale (Figure 2B); images generated using freely available software at: www.wordle.net.

3.4.4 Wellbeing and impairment

Results are presented in Table 4. When controlling for gender and age there was a significant main effect of group on WEMWBs total wellbeing score, $F(4, 76)=7.14$, $p<.001$, Cohen's $f^2=0.39$. The Control+SA and ADHD+SA groups scored significantly lower for wellbeing than did the Control-SA group, however there was no significant difference between the ADHD+SA and the Control+SA groups. There was a significant main effect of group on WFIRS Total functional impairment score, $F(4, 76)=41.40$, $p<.001$, $f^2=1.78$. Compared to the Control-SA group, the Control+SA and ADHD+SA groups were significantly more functionally impaired. Additionally, the ADHD+SA group scored significantly higher for impairment than the Control+SA group. Effect sizes (d) were once again large.

3.4.5 Linear associations of ADHD with cognitions and behaviours

Linear regression results are presented in Table 5. In the first model, the SCQ Frequency scale was included as the dependent variable. The model was significant $F(4, 81)=12.35$, $p<.001$ and explained 30% of the variance in frequency of cognitions ($R^2=0.30$). Inattention was the only significant individual predictor and uniquely explained 12% of the variance in frequency of negative cognitions. In the second model, SBQ Total score was included as the dependent variable to examine the association of ADHD symptoms with the use of safety-seeking behaviours. The model was significant $F(4, 81)=12.35$, $p=.001$, $R^2=0.20$, however none of the individual predictor variables were significantly associated with use of safety-seeking behaviours.

Table 5. Results of regressions predicting social anxiety cognitions and behaviours

	SCQ-F			SBQ		
	<i>t</i>	<i>p</i>	<i>sR</i> ²	<i>t</i>	<i>p</i>	<i>sR</i> ²
Gender	1.24	.217	0.01	-0.02	.983	0.00
Age	-1.55	.124	0.01	-1.21	.228	0.01
Lifetime IA	4.69	<.001*	0.12	2.18	.032	0.04
Lifetime HI	-1.02	.309	0.01	0.09	.929	0.00

Note: Lifetime IA = lifetime inattention score, calculated as the average of child and adult inattentive ADHD symptoms; Lifetime HI = lifetime hyperactive/impulsive score; SCQ-F = Social Cognitions Questionnaire - Frequency scale; SBQ = Social Behaviours Questionnaire; *t* = *t*-test statistic; *sR*² = semi-partial *R*², a measure of the unique proportion of variance in the dependent variable explained by the independent variable; *denotes significance at the adjusted level of $p<.007$.

3.5 DISCUSSION

3.5.1 Main findings

The primary aim of this study was to examine the relationship between ADHD and social anxiety cognitions and behaviours by comparing four groups: adults with ADHD and social anxiety (ADHD+SA), adults with ADHD without social anxiety (ADHD-SA), adults without ADHD with social anxiety (Control+SA) and adults without ADHD without social anxiety (Control-SA). It was hypothesised that the ADHD+SA group would experience the greatest frequency of, and belief in, negative automatic thoughts about social situations, in addition to making the most frequent use of safety-seeking behaviours. Owing to a small sample size (N=5) the ADHD-SA group was not included in analyses, meaning that these hypotheses could not be tested in full. However the available results were consistent with hypotheses by showing that the ADHD+SA group experienced the greatest frequency of and belief in negative cognitions and made greatest use of safety-seeking behaviours, followed by the Control+SA group, followed by the Control-SA group. Analyses were sufficiently powered and identified large effect sizes. These findings have important implications.

First, these findings suggest that cognitions and behaviours are important in the development and maintenance of social anxiety problems among adults with ADHD. This is consistent with the cognitive model of social anxiety developed for the general population (D.M. Clark & Wells, 1995). Second, the finding that the ADHD+SA group scored significantly higher than the Control+SA group for social anxiety cognitions and behaviours is consistent with Young and Bramham's theory (2012) that ADHD increases the risk of social anxiety because core ADHD symptoms lead to repeated social failures, and is consistent with previous research indicating that the presence of adult ADHD is associated with a greater frequency of negative thoughts (Abramovitch & Schweiger, 2009). However, because this research did not examine social failure or take a longitudinal approach it does not provide absolute support for either theory. Further, because the ADHD+SA group scored significantly higher than the Control+SA group for symptoms of social anxiety on the LSAS, it could be argued that group differences in cognitions and behaviours are the result of group differences in social anxiety

symptoms rather than the presence of ADHD. Longitudinal mediation research is required to test these biopsychosocial theories.

As a secondary aim, this study sought to examine the impact of ADHD and social anxiety on levels of wellbeing and impairment. Again, hypotheses could not be tested in full due to exclusion of the ADHD-SA group from analyses. For wellbeing, the ADHD+SA and Control+SA groups scored significantly lower than the Control-SA group, but were not significantly different from one-another. This suggests that the presence of social anxiety reduces wellbeing regardless of ADHD. In contrast, those in the ADHD+SA group did experience the greatest levels of functional impairment, which was consistent with hypotheses but could be accounted for by the fact that the measure of impairment was specifically designed for ADHD (Weiss, 2010). Overall, these results suggest that people with ADHD and social anxiety are more functionally impaired than individuals with social anxiety but without ADHD, but that their subjective wellbeing is no different. This is consistent with research suggesting that individuals with ADHD are more resilient than their non-ADHD counterparts (Modesto-Lowe, Yelunina, & Hanjan, 2011; Sedgewick, Merwood, Cooper, Mowlem, & Asherson, in preparation; Wilmshurst, Peele, & Wilmshurst, 2011; Young & Bramham, 2012).

This study also sought to examine the linear association between ADHD symptoms and social anxiety cognitions and behaviours. Greater severity of ADHD symptoms was found to be associated with greater frequency of social anxiety cognitions, although only for the dimension of inattention. There are several possible explanations for this result. First, this could be an artefact arising from conceptual similarities between ADHD symptoms of inattention and problems with concentration that are characteristic of anxiety (e.g., hyper-vigilance; Pliszka, 1989). However, there was no obvious item overlap between the ADHD and SCQ scales used in the present study. Further, the use of lifetime ADHD symptoms in regression analyses means that the association of anxious cognitions is with *trait* inattention as opposed to a more transient *state* of inattention that could be a manifestation of anxiety. Nonetheless, future research should seek to validate measures of social anxiety among adults with ADHD. An alternative explanation is that the inattentive component of ADHD is associated with a greater frequency of negative thoughts. Previous research (e.g., Abramovitch & Schweiger, 2009; Mitchell et al, 2013) has argued that inattention in ADHD drives a ceaseless

mental activity leading to the generation of negative cognitions and this is also consistent with research reporting an association between ADHD, mind wandering and impairment (Mowlem et al., 2016).

That hyperactive/impulsive ADHD symptoms were not significantly associated with social anxiety cognitions is surprising, given that the impulsive nature of ADHD is believed to be particularly detrimental to social interactions (Young & Bramham, 2012). However, there is a high degree of shared variance between inattentive and hyperactive/impulsive ADHD symptoms (Toplak et al., 2009; Toplak et al., 2012) and the strong correlations between inattention and hyperactivity/impulsivity in this study, coupled with the low semi-partial R^2 values in regression analyses, suggest that an underlying core construct of ADHD is likely to explain much of the variance in cognitions found.

Finally, and contrary to hypotheses, the severity of ADHD symptoms was not significantly associated with the use of safety-seeking behaviours in social situations. Such behaviours may be secondary to the presence of negative cognitions in driving social anxiety in ADHD. Additionally, more severe ADHD symptoms, especially impulsivity, could reduce the likelihood of planned, strategic behavior and instead result in more general, maladaptive coping strategies (Young, 2005).

3.5.2 Secondary findings

Two unexpected, secondary results were also obtained. First, a high proportion of females participated in both the ADHD and control groups. This is unusual given that boys are more frequently diagnosed with ADHD than are girls; however in adulthood women are as likely to receive a diagnosis of ADHD as men (Rucklidge, 2008). Therefore, the fact that the majority of the ADHD sample received a diagnosis in adulthood perhaps explains this gender bias. The gender bias among adults without ADHD is less surprising due to having sampled undergraduate students, among whom females outnumber males (UCAS Conservatoires, 2016).

Second, 82% of the ADHD group and 62% of the controls scored above cut-off on the social anxiety measure. This is different from the estimated social anxiety prevalence of 30% of adults with ADHD and 12% of the general population

(Kessler et al., 2006; Kessler et al., 2005). Among adults with ADHD, this finding could again be attributed to the recruitment of individuals diagnosed in adulthood, who might be coming to terms with their diagnosis and therefore more highly distressed (Young, Bramham, Gray, & Rose, 2008). Additionally, comorbidity among adults with ADHD is the rule rather than the exception (Skirrow & Asherson, 2013). Among controls, the high prevalence of social anxiety could be another factor associated with the use of undergraduates as controls, whose mental health might have been affected by stress associated with the transition into adult life (Bayram & Bilgel, 2008). There might also be an effect of gender, since women with and without ADHD are more likely than men to present with 'internalising' symptoms such as anxiety (Bayram & Bilgel, 2008; Daughters et al., 2009; Rucklidge, 2008). Finally, it is important to note that individuals who scored high for social anxiety symptoms on the LSAS would not necessarily meet diagnostic criteria for a social anxiety disorder, although the LSAS does have good psychometric properties when used as a diagnostic tool (e.g., Mennin et al., 2002).

3.5.3 Limitations

The results of this study should be interpreted in the context of several limitations. The first set of limitations concerns the online recruitment and data collection strategy, which has implications for the generalisability of results. The use of anonymous, online questionnaires meant that participants were relied upon to provide accurate information, which could not be validated independently. This includes ADHD diagnoses, which could not be verified via clinics, or using the BAARS measure of ADHD symptoms since it lacks sensitivity when used diagnostically. Only a subset of the ADHD sample was recruited via clinics, which could have led to a selection bias when compared to adults with ADHD recruited via the Internet, or a selection bias whereby adults with ADHD who scored high for social anxiety were more likely to choose to take part. The potential for selection bias is also apparent when examining the demographic characteristics of the participants with ADHD who were predominantly of White British ethnicity, predominantly educated to degree level or higher and predominantly in employment. This is at odds with the wider literature on ADHD, which indicates that the disorder is invariant across ethnicity (e.g., Polanczyk et al., 2007) and is associated with impaired education and unemployment (e.g., Asherson, 2005). The ethnic backgrounds of participants in this study could perhaps be seen as

representative of regional variations in ethnicity within the United Kingdom (Office for National Statistics, 2011), while the education and employment levels within this sample could reflect a trend whereby higher functioning individuals are more likely to receive an ADHD diagnosis as adults, possibly because they are exposed to more demanding working environments that require an increased capacity for attention and intact executive functions (Young & Bramham, 2012). Relatedly, adults with severe ADHD might have struggled to complete an internet-based questionnaire lasting 20 minutes (as used in this study) due to the demands placed on their attention, meaning that those with severe ADHD may have chosen not to take part.

The second, related set of limitations concerns the statistical analyses and group comparisons conducted in this study. Because of small and unequal sample sizes it was not possible to conduct Analysis of Covariance (ANCOVA) or to compare four groups as originally intended. The lack of an ADHD-SA group in the main analyses placed a particular limitation on this study as it meant that the study hypotheses could not be tested in full: Specifically, without comparing individuals with ADHD who score high versus low for social anxiety, it is not possible to determine the relative contribution of cognitions and behaviours to the development or maintenance of social anxiety among adults with ADHD, or to determine the extent to which social anxiety can be viewed as a separate construct to ADHD. Further work is therefore required to test the cognitive model of social anxiety. This should include a group of adults with ADHD but without social anxiety and would also benefit from the inclusion of larger samples. Replication of laboratory-based studies of social anxiety, but including adults with ADHD, might also help to test some of the more specific hypotheses that have emerged from cognitive research into social anxiety (e.g., theories regarding an external focus of attention; see Clark, 2005) and might also help to clarify the nuanced relationship between attention, anxiety and ADHD.

3.5.4 Conclusions

This study compared adults with and without ADHD classified as either high or low in social anxiety symptoms. Results indicated that adults with ADHD and high levels of social anxiety experienced a greater number of negative cognitions about social situations, which they believed more strongly, than did adults in non-ADHD

comparison groups. Adults with ADHD and high social anxiety were also more likely to make use of safety-seeking behaviours in social situations and were more functionally impaired, and there was a significant association of inattentive ADHD symptoms with the frequency of negative cognitions. Overall, these findings suggest that the cognitive model of social anxiety can be applied to adults with ADHD and are broadly consistent with theories suggesting that ADHD increases risk of social anxiety.

Further research is now required to test these theories more fully and should include longitudinal and experimental designs to establish whether social anxiety in ADHD is qualitatively different from social anxiety in the remainder of the population. Where possible, such studies should be rigorously controlled to remove potential sources of bias (e.g., using matched samples when comparing adults with/without ADHD, including adults clinically diagnosed with social anxiety disorder). The results of the qualitative study being conducted as an adjunct to this paper will also be important helping to describe any unique components of social anxiety among adults with ADHD. Clinically, these findings support the use of CBT for working with social anxiety among an adult ADHD population, although clinical trials are now required. The high prevalence of social anxiety among adults with ADHD included in this study also highlights the need for vigilance among clinicians working in adult mental health settings, who may encounter adults with undiagnosed/untreated ADHD presenting with social anxiety problems.

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CHAPTER 4: EXECUTIVE SUMMARY

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Word count:

925 (excluding headings)

SOCIAL ANXIETY AMONG ADULTS WITH ADHD: A RESULT OF COGNITIVE BIAS?

Background:

Attention-deficit/hyperactivity disorder (ADHD) is characterised by symptoms of inattention (i.e., being forgetful, difficulties concentrating, difficulties with planning and organising), hyperactivity (i.e., being restless and energetic, always fidgeting or being on the move) and impulsivity (i.e., speaking or acting on impulse without considering the potential consequences). Although we can all experience these difficulties on some occasions and to some degree, ADHD is diagnosed when these problems are severe, persistent and when they impair an individual's quality of life (e.g., preventing someone from holding down a job or a stable relationship, significantly impacting their education). Around 3% of adults are thought to suffer from ADHD, meaning it is a relatively common condition.

Social anxiety refers to a persistent fear of social or performance situations, in which an individual believes he or she will act in a way that is humiliating or embarrassing. About 30% of adults with ADHD experience serious problems with social anxiety. In people without ADHD this figure is lower, at about 12%. It therefore seems important to try and understand why people with ADHD are more likely to have problems with social anxiety.

In people without ADHD, social anxiety is treated using a kind of talking therapy called *Cognitive-Behavioural Therapy*, or *CBT*. CBT helps us to understand how unhelpful thoughts and beliefs can lead to feelings of distress. Distress can be felt as an emotion, such as anxiety or anger, or as a feeling in the body, such as an increased heart rate or 'butterflies' in the stomach. Distress can be difficult to tolerate and we sometimes try to cope by avoiding things we find distressing or behaving in a way we hope will fix things. These coping strategies are called *safety-seeking behaviours*, as we use them to try and feel safe. An example of a safety-seeking behaviour is trying to hide your face in a social situation because you are worried that other people might see you blushing. By hiding your face you might feel relieved in the short term, but the problem with safety-seeking behaviours is that they can prevent you from learning that your fears might not come true.

Research therefore tells us that unhelpful beliefs about social situations and safety-seeking behaviours are both important in the development of a social anxiety problem. Further, these factors prevent a social anxiety problem from going away. However, we do not yet know whether the same theory can be used to understand social anxiety among adults with ADHD, nor do we understand the impact of having ADHD *and* social anxiety on psychological wellbeing or levels of impairment.

Aims:

This study had three main aims: first, to see whether adults with ADHD who were high in social anxiety would experience more unhelpful beliefs about social situations and make use of more safety seeking behaviours when compared to other groups of individuals; second, to see whether adults with ADHD and high social anxiety experienced lower levels of wellbeing and higher levels of impairment when compared to others; third, to see whether more severe levels of ADHD symptoms were associated with more unhelpful beliefs or behaviours.

Methods:

Adults with and without ADHD were invited to participate in this study, which involved completing Internet-based questionnaires that asked about unhelpful beliefs about social situations, use of safety-seeking behaviours in social situations, levels of psychological wellbeing and levels of impairment. The main analysis compared scores on these questionnaires across three groups: Adults with ADHD who scored high for social anxiety, adults without ADHD who scored high for social anxiety, and adults without ADHD who scored low for social anxiety. In the entire sample (i.e., not split into groups), the relationship of ADHD symptoms of inattention and hyperactivity/impulsivity with social anxiety beliefs and behaviours was also examined.

Results:

The adults with ADHD who scored high for social anxiety experienced more unhelpful beliefs about social situations, which they believed more strongly, than did participants in the two comparison groups. Adults with ADHD and high social

anxiety also made the greatest use of safety-seeking behaviours during social situations and experienced the greatest levels of impairment in everyday life. In turn, the group without ADHD who scored high for social anxiety experienced more unhelpful beliefs, made more use of safety behaviours and were more impaired than the group without ADHD and without social anxiety. This indicates that ADHD with social anxiety is associated with more of the cognitive-behavioural symptoms of social anxiety and with higher rates of impairment.

For wellbeing, the group with ADHD and social anxiety did not differ from the group without ADHD but with social anxiety, although both groups differed from the group without ADHD and without social anxiety. This indicates that low wellbeing is primarily a result of social anxiety and not ADHD.

When looking at the entire sample, ADHD symptoms of inattention were associated with the frequency with which people experienced unhelpful beliefs about social situations, but not with the use of safety-seeking behaviours. This indicates that being more inattentive is associated with having more unhelpful beliefs.

Conclusions:

Overall, the results of this research suggest that unhelpful beliefs and behaviours are important components of social anxiety among adults with ADHD, indicating that the theory of social anxiety developed for people without ADHD can be applied when working with ADHD. Being inattentive is also associated with having more unhelpful beliefs about social situations, which may mean that simply having more severe ADHD symptoms also increases the risk of social anxiety, regardless of whether an individual has a clinical diagnosis of ADHD. These findings support the use of CBT to treat social anxiety in adults with ADHD.

CHAPTER 5: CONNECTING NARRATIVE

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2965 (excluding headings)

Overview

This reflective narrative integrates the research projects I have completed as part of my training in clinical psychology. I initially consider case studies before moving on to examine my service improvement project. I will end with a discussion of my critical review of the literature, my main research project and the broader themes characterised by those pieces of research.

Case studies

I completed five clinical case studies during the course of my training and a common theme is the application of cognitive behaviour therapy (CBT), but with additional therapeutic approaches either drawn on or considered. My first case study described the successful treatment of Obsessive Compulsive Disorder (OCD) in a working age adult setting, with a young woman who was experiencing sexual orientation intrusions. This was my first experience of applying CBT and it was incredible to see that cognitive therapeutic techniques and in particular exposure and response prevention, had such an impact on her symptoms of distress. I used outcome measures before and after therapy, although in hindsight I wish I had also made use of idiosyncratic ratings of OCD symptoms across sessions to help me to evaluate the process of change in therapy. This case was additionally considered from a social constructionist perspective due to the sensitivities concerning work around an individual's sexual orientation (at the time of writing it, Channel 4 had aired a documentary on the controversial and unethical use of psychological interventions to try and change a person's sexuality).

The second case study I completed was on my older adult placement, where I used CBT to treat depression experienced by an older woman following a sudden change in her physical health. An important component of this case was the consideration of developmental factors during formulation (e.g. life events, intergenerational beliefs). I noticed that therapy moved at a slower pace and identified grief as an important factor in the development and maintenance of her depression. I therefore drew on Inter-Personal Therapy (IPT) techniques to work with grief, while continuing to use CBT. My third case study was also characterised by developmentally appropriate adaptations to CBT. This case study drew on the adult literature to treat health anxiety experienced by an adolescent girl. I used a

Single Case Experimental Design (SCED) to evaluate the effectiveness of therapy, showing that the adult treatment model could be used to alleviate symptoms of health anxiety in adolescence. The work in this case was augmented with narrative therapeutic techniques, in which I attempted to externalise the difficulties faced by the young person with whom I worked, while internalising and building up the strengths she had that would help her to overcome anxiety.

The fourth case study used CBT techniques but within the context of a mindfulness-based group intervention for adults with learning disabilities who were experiencing anxiety. This intervention in particular was characterised by developmental adaptations to therapy, in which I attempted to explain the concept of mindfulness and the interrelationships between thoughts, feelings and behaviour in concrete terms. Often this involved physical metaphors or imagery, and I found this creative element of therapy to be particularly enjoyable.

The fifth case study took a different approach, applying CBT to work with symptoms of trauma and difficulties with adjustment experienced by a young man with a spinal cord injury. This work took a very cognitive, often theoretical, perspective (e.g. discussing meta-cognition) and was therefore quite different to the work completed in my group for adults with learning disabilities. However, one similarity was the use of mindful breathing techniques during therapy. This case was also similar to my older adult and adolescent case studies in that psychological distress was accompanied by difficulties or concerns with physical health. This study also used a SCED to evaluate my intervention.

Across all of the cases described, an important theme was therapeutic engagement and an attempt to connect with people who were experiencing distress. This theme connects my clinical case studies with my service improvement research.

Service Improvement Project

My Service Improvement Project (SIP) was perhaps the largest project I completed during training. The idea came from my clinical supervisor on my first placement, Chris Gillmore. Chris was keen to create a video about psychological therapy that could be viewed by patients before they attended an initial therapy

appointment. This sounded like a good idea at the time and I very enthusiastically volunteered to develop and evaluate a video about psychological therapy for my service improvement research. I did not realise what I was taking on.

The project began with a brief review of the literature to determine how a video might be used to improve knowledge about psychological therapy, which led in turn to a review of the literature on therapeutic expectations. On the basis of these initial literature searches I put together a research proposal. I had originally planned to develop the video and evaluate the impact on knowledge and expectations for therapy using a within-subjects design, assessing knowledge and expectations for therapy before and after viewing a video. Chris felt that this design would not be feasible and we revised the project in order to ask patients to rate the change in their knowledge and expectations using visual analogue scales. We then examine engagement with the service by auditing data on appointment attendance rates.

I am glad that the project was redesigned early on, as it was scarcely feasible even in its revised form. I found it difficult to co-ordinate service users and clinicians, mainly because I was not based within the service once the project began. It therefore took a long time before I was able to complete stakeholder consultations during the first phase of the project. The second phase, video development, also took an enormous amount of time to complete. This was due to difficulties identifying service users and clinicians who were willing to appear in the video and difficulties arranging mutually convenient filming dates. After completion of the video, it was then difficult to find service users willing to provide feedback on the video, which ultimately prevented me from evaluating the video as planned. As discussed in my service improvement chapter, it is possible that a number of organisational factors limited the involvement of clinicians and service users in this research. Yet when I watch the video that was created, all these struggles seem worthwhile.

I am extremely proud of the video that was created and of all the people who contributed to its development. The stars of the show are undoubtedly the service users who appeared in the video to share their stories. I truly hope that the video encourages other people to access therapy in future and challenges the stigma that is sometimes associated with seeing a psychologist or having difficulties with

mental health. I am also grateful to the clinicians who appeared in the video, and to the clinicians and service users who attended focus groups. I am indebted to the Audio-visual department at the University of Bath, in particular Simon Wharf, who completed all of the filming and editing for the video. My supervisor, Chris brought his expertise in leadership and service improvement and was also extremely supportive at times of despair. I also valued the input I received from Catherine Hamilton-Giachritsis, my current clinical tutor, when planning the project and writing up.

Critical Review of the Literature and Main Research Project

Prior to clinical training I spent four years researching ADHD, developing my understanding of the condition and meeting children, adolescents and adults who were diagnosed. Although we were encouraged to 'branch out' in our research during training, I was keen to focus the majority of my research on ADHD, as I believe there is value in developing expertise. I view ADHD from a biopsychosocial perspective: There is a wealth of literature demonstrating high heritability and neuropsychological correlates of inattention and hyperactivity/impulsivity, and I recognise the importance of an individual's environment, beliefs, behaviours and attachment style in modulating these symptoms. I also view ADHD as operating on a continuum: We all vary in our abilities to concentrate, our activity levels, our impulsiveness and our general self-regulatory abilities, but a few people (around 5%) are extremely inattentive, hyperactive and impulsive, and severely functionally impaired as a result. I now want to reflect on what I see as the Good, the Bad and the Ugly sides of ADHD.

The 'Good' side of ADHD was examined in my critical review of the literature, in which I sought to understand the relationship between ADHD and divergent thinking, a cognitive process associated with creativity. This builds on some of my previous research looking at whether there are advantages associated with ADHD and is a positive psychological approach, something I am keen to promote in my clinical work. My critical review of the literature took longer to complete than I had expected. I have written literature reviews in the past, but the systematic component of this review undoubtedly made it more complicated and more time consuming than other reviews I have worked on. I therefore learned a great deal

about critiquing scientific literature and I will undoubtedly draw on these skills in future research and in my work as a peer reviewer.

I was disappointed not to have been able to complete a meta-analysis as part of my critical literature review and had there been additional, high quality papers I definitely would have done so. I was also slightly disappointed not to find evidence that people with ADHD have enhanced divergent thinking abilities; however, as a researcher I approached the project with an open mind and still view the end result as positive, since it shows that people with ADHD are not impaired in their abilities relative to controls.

I had no field supervisor as such for my critical literature review; however I found conversations with one of my collaborators, Philip Asherson, extremely valuable in guiding my thinking on this topic. Philip was my PhD supervisor and thanks to his input I was able to link up with other researchers interested in positive psychology and ADHD, and even got to talk on the topic at a recent conference for adults with ADHD, where I shared the stage with the comedian Rory Bremner (no pressure!). Even more valuable was the support I received from my main supervisor, Ailsa Russell. Ailsa ensured I stuck to my brief, encouraged me to conduct a meta-analysis (despite being unable to do so in the end) and patiently listened as I complained about how much time the project took to complete.

The 'Bad' side of ADHD (excuse the pejorative) is the range of secondary difficulties that can occur alongside symptoms of inattention, hyperactivity and impulsivity. I examined one area of difficulty, social anxiety, in my main research project. Having previously completed research using epidemiological datasets I was looking forward to conducting a more clinically-oriented study. I planned the study with assistance from my primary supervisor, Ailsa, who kept me grounded and focussed during the development of my research questions and hypotheses. I then applied for ethical approval from the NHS Research Ethics Committee (REC) and the University of Bath Psychology Ethics Committee. I had never applied for NHS REC approval before and was surprised at the level of detail required to complete the forms. I had to liaise with three different Research and Development (R&D) departments across three different NHS Trusts, which added an additional layer of complexity to the process of gaining ethical approval. I spent a great deal of time completing ethics and R&D forms, and believe that this paid off in that I

passed the ethics board with only a proportionate review of my study. However, this did mean that I had less time to collect data than planned.

When conducting my main research project, the first thing that struck me was how few adults with ADHD agreed to participate. The clinics I was recruiting from saw large numbers of adults with ADHD every month and clinicians were confident that many of these people would take part. However this was not the case, and the number of participants recruited per clinic ranged from 0-9! The duration of the study was extended to allow additional data collection to take place, however this did not substantially alter the final sample size.

Part of the difficulty may have been the recruitment strategy, as the clinics were only acting as Participant Identification Centres and were therefore sharing information about the study as opposed to actively recruiting participants. Another difficulty may have been the online questionnaire, which took around 20 minutes to complete. This is possibly too long for adults with ADHD. I tried to make the questionnaire accessible by consulting with people with personal experience of ADHD during the design phase, who provided positive feedback on the questionnaire. However, at a conference for adults with ADHD I received feedback from a participant who stated that they had found the questionnaire frustrating.

One element of recruitment that did work relatively well was the *Everyone Included* scheme operated by one of the R&D departments, in which the R&D team wrote to adults with ADHD to invite them to participate in research. This accounted for around half of the participants recruited via clinics. Another element that worked well was the online recruitment of adults with and without ADHD. In particular, this strategy accounted for the recruitment of the majority of adults with ADHD. Overall, the recruitment difficulties I encountered shaped the analysis I was able to conduct. I had initially planned to compare adults with ADHD who scored high vs. low for symptoms of social anxiety, but due to a high prevalence of social anxiety symptoms within this group the planned analyses were not possible.

In reflecting on the findings of my main research, I was genuinely struck by the quantitative results. Although I had hypothesised that adults with ADHD and high levels of social anxiety would score higher than comparison groups for social anxiety beliefs and behaviours, the findings were stronger than I had expected. I

was also surprised at how many adults with and without ADHD scored above cut-off for social anxiety in my study. Perhaps there was an element of self-selection, whereby people who identified themselves as experiencing social anxiety were more likely to take part, although I also wonder if this incidental finding highlights the commonality of mental health difficulties.

I was struck by the qualitative findings too, albeit for different reasons. First, I was struck by the courage shown by the people who participated in the qualitative interviews. They shared with me personal and painful social experiences and I felt privileged to be in a position to hear them. Second, I was struck by how difficult life with ADHD can be, particularly when it impacts on social situations and undermines an individual's sense of self. Third, I was struck by the positive impact that a diagnosis of ADHD can have, finally providing people with a framework for understanding some of the difficulties they have faced in their lives. I spent many evenings and weekends completing the qualitative analysis and I am extremely grateful to my field supervisor, Amy Watts, for spending her evenings and weekends co-coding the data and helping me to develop the themes.

The 'Ugly' side of ADHD is, I believe, social marginalisation, which I discussed with Amy during the qualitative analysis. The media once saw ADHD as a fad, *'The Disorder of the 90s'*, and continues to report stigmatising headlines on occasion. The school system is not designed to cater for people who are unable to concentrate or sit still for long periods of time, but who may have other, more practical talents or skills. Higher Education can be similar and from speaking with two colleagues at a recent ADHD conference I was shocked to learn that some Universities still do not offer additional support to students with ADHD, despite recognising other neurodevelopmental problems and despite neuropsychological research telling us that attention problems, however we choose to label them, are likely to impair learning. The work environment can marginalise individuals with ADHD by penalising inattention rather than supporting individuals. Finally, a number of studies have identified high rates of ADHD in the prison population, yet there is very little support to help offenders in this regard.

More ugly still, I fear, is the marginalisation of people with ADHD by Clinical Psychologists. My experience is that some psychologists view ADHD as a dirty word, preferring instead a label of 'poor attachment' or occasionally even

‘personality disorder’. I do not dispute the significant impact that attachment difficulties or a history of trauma have across the lifespan, but I do wonder which of these terms is more stigmatising? Part of the problem is, I think, a lack of awareness or understanding of ADHD and I can reflect that I received only one day’s teaching on childhood ADHD during training, with no integration of ADHD into our adult, learning disability or forensic teaching blocks. I also wonder whether this negative view of ADHD forms part of a wider rebellion against the medical model, since one of the primary treatments for ADHD is stimulant medication. Clearly attachment is important to every individual’s development and clearly part of our role as clinical psychologists is to scrutinise diagnoses, challenge the unnecessary use of medication (especially among children!) and develop formulations to understand people as people, their problems as unique and to promote psychological wellbeing. But by disengaging with the concept of ADHD we place ourselves in a position where we cannot achieve these goals. The resulting narrative, in which the very existence of ADHD is sneered at and challenged, can be hugely shaming for the people diagnosed; the implicit message being that there is no name for the difficulties you are facing, and that the problem is you. As psychologists we must be mindful of the language that we use.

APPENDICES

APPENDIX A: Author guidelines - *Journal of Attention Disorders*

Journal submission guidelines copied on 07/06/2015 from:

<https://uk.sagepub.com/en-gb/eur/journal-of-attention-disorders/journal201756#submission-guidelines>

Journal of Attention Disorders (JAD) focuses on basic and applied science concerning attention and related functions in children, adolescents, and adults. *JAD* publishes articles including, but not limited to, diagnosis, comorbidity, neuropsychological functioning, psychopharmacology, and psychosocial issues. The journal welcomes manuscripts addressing timely, notable topics in practice, policy, and theory, as well as review articles, commentaries, in-depth analyses, empirical research articles, and case presentations or program evaluations that illustrate theoretical issues or new phenomena.

Submission

Style for all submissions must follow that of the *Publication Manual of the American Psychological Association* (6th ed.). Submission to the journal implies that the manuscript has not been published elsewhere and is not in consideration by any other journal. Submission to the Applied Research section should be no more than 30 double-spaced pages, including an abstract of 150 words or less using a sectional guideline (Objective, Method, Results, and Conclusion), a brief biographical statement for each contributing author, endnotes, references, tables, and figures, all on separate pages. Author names and affiliations should appear on a separate cover page and the manuscript should be formatted for anonymous review.

Journal of Attention Disorders only accepts submissions electronically. Electronic submissions should be sent to <http://mc.manuscriptcentral.com/jad>. Submissions must be in Microsoft Word. Please ensure that tables are editable files in Word or Excel, not images. Artwork should have a resolution of 300 dpi or higher. Images are best submitted separately from the text document. Please do not embed images into your file, as embedding raster image files (photographs) in Word or similar programs automatically reduces the resolution below what is needed for quality print publication.

Featured Sections

JAD features applied research. *JAD* additionally publishes unsolicited articles in three other sections: Research Into Practice, Research Briefs, and Literature Reviews. The first, Research Into Practice, should focus on well-developed areas of research with an emphasis on application and evaluation of practice. Specifically, the goal of these submissions is to illustrate how relevant conceptual and empirical principles can be implemented in evaluating and practice. Manuscripts should present theoretically sound and empirically documented principles and illustrate how these have been synthesized into practiced and proven interventions.

The journal is also interested in publishing articles in a Research Briefs section promoting the dissemination of new, novel, or otherwise important research information in a format that does not require extensive journal space. Research briefs should be substantially shorter than general articles: no longer than 15 pages, including tables, figures, and references. When submitting a manuscript for consideration as a research brief, the author should so stipulate and agree not to publish a more comprehensive version of the article in another source. Finally, the journal is interested in publishing literature reviews. These reviews should be no more than 50 double-spaced pages. Authors considering writing a literature review should consider contacting the editor before submission. JAD will also publish relevant letters describing interesting cases of developments in the field relative to clinical practice.

The journal also welcomes Letters to the Editor of no more than 300 words. Letters will be published at the editor's discretion. Opinion essays on relevant topics in ADHD are published by invitation only.

Authors who want to refine the use of English in their manuscripts might consider utilizing the services of SPi, a non-affiliated company that offers Professional Editing Services to authors of journal articles in the areas of science, technology, medicine, or the social sciences. SPi specializes in editing and correcting English-language manuscripts written by authors with a primary language other than English. Visit <http://www.prof-editing.com> for more information about SPi's Professional Editing Services, pricing, and turn-around times, or to obtain a free quote or submit a manuscript for language polishing.

Please be aware that SAGE has no affiliation with SPi and makes no endorsement of the company. An author's use of SPi's services in no way guarantees that his or her submission will ultimately be accepted. Any arrangement an author enters into will be exclusively between the author and SPi, and any costs incurred are the sole responsibility of the author.

This journal is a member of the Committee on Publication Ethics (COPE).

APPENDIX B: Author guidelines - *BMJ Quality and Safety*

Journal submission guidelines copied on 07/06/2015 from:

<http://qualitysafety.bmj.com/site/about/guidelines.xhtml>.

Note that for conciseness, only guidelines pertaining to Original Articles and Quality Improvement Reports are included below. Guidelines for other types of article are not relevant to the materials presented in Chapter 2, which is a Quality Improvement Report that follows SQUIRE guidelines for the reporting of More Extensive Quality Research. (see below).

Instructions for Authors

BMJ Quality & Safety has a specific policy on quality improvement reports that are considered to be exempt from ethics review.

Triple Blind Review

Please read this section carefully before submitting your paper. BMJ Quality & Safety operates triple-blind peer review which requires authors to submit an anonymous version of their manuscript file. The manuscript file should be anonymous and should NOT include:

- Any author names (including file path in the document footer)
- Author institution details
- Author contact details
- Acknowledgements
- Competing interests (if declared)
- Ethics approval statements that refer to your institution

Please ensure that tracked changes are switched off if previously used. The file will automatically be converted to PDF once uploaded through the submission system and will be available to the reviewers. If the file is not completely anonymised, your manuscript may be returned to you. If you have any questions about triple blind review please do not hesitate to contact the editorial office.

Please do NOT remove, redact or in any way anonymize references in the manuscript, including to citations your own previous work. We realize that an astute reviewer will be able to figure out who you are if you refer to your previous work, but reviewers often need to see citations supporting statements in your manuscript, especially ones that relate to the methods or help interpret your findings.

Editorial policy

BMJ Quality & Safety (formerly Quality & Safety in Health Care) is a leading international peer review journal in this growing area of quality and safety improvement. It provides essential

information for those wanting to reduce harm and improve patient safety and the quality of care. The journal reports and reflects research, improvement initiatives and viewpoints and other discursive papers relevant to these crucial aims with contributions from researchers, clinical professionals and managers and experts in organisational development and behaviour.

BMJ Quality & Safety aims to contribute actively to the debate about the quality and safety of health care by exploring subjects and ideas (from both routine clinical and managerial practice and research) which concern and inform this debate and which focus on real benefits to patients.

The journal attempts to handle the review process and publication as expeditiously as possible. The review process is usually completed within 4 weeks (mean 20 days), but can take longer in some instances.

Open Access

Authors can choose to have their article published Open Access for a fee of £1950 (plus applicable VAT).

Article types and word counts

The word count excludes the title page, abstract, tables, acknowledgements and contributions and the references. For non-native English speakers we now offer a professional editing service.

Original Articles

Original Articles report research and studies relevant to quality of health care. They may cover any aspect, from clinical or therapeutic intervention, to promotion, to prevention. They should usually present evidence indicating that problems of quality of practice may exist, or suggest indications for changes in practice, or contribute towards defining standards or developing measures of outcome. Alternatively, they should contribute to developing approaches to measuring quality of care in routine practice. The journal is interprofessional and welcomes articles from anyone whose work is relevant, including health professionals, managers, practitioners, researchers, policy makers, or information technologists.

- Word count: 3000-4000 words
- Structured abstract up to 275 words in length
- Tables/Illustrations: up to 5 tables or illustrations; appendices that present additional methodological details or other relevant materials that may be of interest to readers can also be included with the intention of aiding peer reviewers or providing them as online material for interested readers.
- Research checklists should be uploaded during the submission process. If these are not applicable to your research please state the reason in your cover letter.

Quality Improvement Reports

BMJ Quality & Safety has a specific policy on quality improvement reports that are considered to be exempt from ethics review.

These have the same general guidelines as Original Research in terms of word length, but please

note the detailed recommendations for content and formatting below:

- Background
- Assessment of problems
- Results of assessment/measurement
- Strategies for quality improvement/change
- Lessons and messages

Guidelines for Reporting More Extensive Quality Research

The SQUIRE guidelines (Standards for QUality Improvement Reporting Excellence) provide a framework for reporting formal, planned studies designed to assess the nature and effectiveness of interventions to improve the quality and safety of care. It may not always be appropriate or even possible to include information about every numbered guideline item in reports of original studies, but authors should at least consider every item in writing their reports. Although each major section (that is, Introduction, Methods, Results and Discussion) of a published original study generally contains some information about the numbered items within that section, information about items from one section (for example, the Introduction) is also often needed in other sections (for example, the Discussion).

Please also see our article 'Publication guidelines for quality improvement in health care: evolution of the SQUIRE project' 2008;17:Suppl 1.

Plagiarism Detection

BMJ is a member of CrossCheck by CrossRef and iThenticate. iThenticate is a plagiarism screening service that verifies the originality of content submitted before publication. iThenticate checks submissions against millions of published research papers, and billions of web content. Authors, researchers and freelancers can also use iThenticate to screen their work before submission by visiting www.ithenticate.com.

APPENDIX C: VIEW project - Copy of ethical approval

1. Letter from AWP R&D Department

Avon and Wiltshire 
Mental Health Partnership NHS Trust

Avon and Wiltshire Mental Health Partnership AWP Trust
AWP Quality Academy
Blackberry Centre
Manor Road
Fishponds
BS16 2EW

0117 378 4238/ 07825 725296

Dr Andrew Merwood

Trainee Clinical Psychologist
Doctorate in Clinical Psychology
Department of Psychology
University of Bath, UK

Date: 22 January 2015

Dear Andrew

Video Information and Expectations of therapeutic Work (VIEW).

AWP Reference: 2015.E002

This letter is to confirm that your evaluation is now approved and also provides you with our reference number.

If you do need any further support or information, please contact us using the contact details above, quoting our reference number for your study.

The importance of disseminating all evaluation work cannot be over emphasised. It is only by sharing our learning that we can improve services across AWP. For this reason, the findings of all evaluation work should be reported to the Evaluation team via email. The team will champion the results of service evaluations, and work with evaluators to ensure those results are disseminated and acted upon, and that the results of evaluations are reflected in future service delivery. The team will also work with evaluators to produce publications for the public domain.

I very much look forward to receiving the results of your evaluation in due course.

Yours sincerely,




Janet Brandling

2. Emails from University of Bath Psychology Ethics Committee

2a. Initial approval

From: Psychology Research Ethics Committee psychology-ethics@bath.ac.uk
Subject: 15-011
Date: 6 February 2015 09:19
To: Andrew Merwood A.Merwood@bath.ac.uk



Dear Andrew Merwood

Reference Number 15-011 Video information and expectations of therapeutic work (VIEW)

The ethics committee have considered your application for the study above and have given it conditional ethical approval.

The committee have raised the following points which they would like you to attend to before giving the study full ethical approval:

1. The final questionnaires and video script for participants will need to be submitted to the ethics committee once they have been developed and prior to the onset of phase 3.
2. The participant information sheet seems to indicate that participants will be given information about treatment via the video that they would not receive otherwise. However, the project rationale states that the video will provide information that patients would typically receive in written format. Please clarify, and confirm that no standard information is being withheld.
3. If additional information is being provided, the project developers might consider this being provided in written form to compare with video delivery.

Can a signed copy of the AWP approval be provided?

Please send the revised document the Ethics Committee: psychology-ethics@bath.ac.uk


Please remember that you may not collect any data until you have ethical approval.

Yours sincerely,

Dr Michael J Proulx
Chair, Psychology Research Ethics Committee

2b. Approval of revision

From: psychology-ethics psychology-ethics@bath.ac.uk
Subject: Re: 15-011
Date: 27 February 2015 08:27
To: Andrew Merwood am2168@bath.ac.uk



Dear Andrew Merwood

Reference Number 15-011 Video information and expectations of therapeutic work (VIEW)

Thank you for satisfactorily attending to those amendments. I can now confirm that you have full ethical approval for your study.

Best wishes with your research,
Dr Michael J Proulx
Chair, Psychology Research Ethics Committee

2c. Approval of film script

From: **psychology-ethics** psychology-ethics@bath.ac.uk
Subject: RE: 15-011
Date: 24 June 2015 15:31
To: Andrew Merwood A.Merwood@bath.ac.uk

P

Dear Andrew

Electronic is fine, and I see no problems with these materials, which are now incorporated into your approved study, via Chair's Action.

Best wishes,
Dr Michael J Proulx
Chair, Psychology Research Ethics Committee

From: Andrew Merwood [mailto:am2168@bath.ac.uk]
Sent: 23 June 2015 20:55
To: psychology-ethics
Cc: Andrew Merwood
Subject: Re: 15-011

Dear Michael,

I was asked to provide a script and finalised questionnaires relating to my project, ethics ref 15-011.

I have attached here an amended proposal that includes the script and the finalised questionnaires (these questionnaires have not changed from my original ethics submission). The document is included with and without track changes. A separate copy of the script is also included.

I have been away from the university on placement this week and unable to submit paper versions of these form. Can you please confirm whether this electronic submission is sufficient? If not, I can drop in a paper copy this week.

Best wishes,

Andrew

APPENDIX D: VIEW project - Stakeholder consultation

Table C1. Summary of feedback from service user focus group

Theme	Details
Structure of the video	<ul style="list-style-type: none"> • Break into segments, visually separated • Include three sections: <ul style="list-style-type: none"> ○ What do you want people to know? <ul style="list-style-type: none"> ▪ What psychological therapy is ▪ What to expect at the first appointment ▪ Who uses psychological therapy? ○ How do you want people to feel? <ul style="list-style-type: none"> ▪ Not judged ▪ Calm ○ What do you want people to do? • Not too many “talking heads” (i.e. narration) • Music: <ul style="list-style-type: none"> ○ Acoustic and uplifting. Nothing too disruptive or broody, but not excessively bouncy ○ Use incidental music or more than one song • Links at end of video: <ul style="list-style-type: none"> ○ Are there good links to resources about therapy? e.g., Mind, Time for Change, AWP? ○ Links at end for people who are unsure or who may not want therapy • Timing: <ul style="list-style-type: none"> ○ Around 5 minutes in length ○ Keep it short, sweet and simple. Make it visually interesting. Focus on the key points • People in video: <ul style="list-style-type: none"> ○ Try to have a mix of ages and ethnicities, especially if using actors ○ The service could have people aged 18-80, so make sure the video meets their needs. Target at “an intelligent 14 year old”? • Language: <ul style="list-style-type: none"> ○ Avoid bureaucratic jargon - words like “care plan”, “care pathway”, “recovery”, “care coordinator” ○ Call people “people” (e.g. “the people who come to see us”), or failing that “service users”. ○ Address to the viewer - address to “you” • Avoid excess logos all over screen - first and foremost, this is about emotions and emotional connections
Experiences of therapy	<ul style="list-style-type: none"> • Therapy made me feel safe, reassured and listened to • I was treated positively and respectfully, with compassion • You (the service user) will direct much of therapy

	<ul style="list-style-type: none"> • You have autonomy and control • You get a different experience in a group or 1:1, the therapist will help you decide what will be best • You're the expert in your life - the therapist will listen to you
Therapy is normal	<ul style="list-style-type: none"> • Lots of other people have mental health problems and use psychological therapy • You're among people in the same boat • 1 in 4 people have a mental health problem at some point in their lives • Take away any negativity about therapy • It's a safe place to talk • Have service users talk about their own experiences of therapy • People think there's a stigma attached to mental health, but when you go to therapy you realise there isn't the stigma • You're stepping into a big party, into a world full of people with difficulties • Going to therapy is normal, it's not a big risk • Could include quotes/examples of celebrities with mental health problems • Talking about emotions is good - backed up by research • Not just for women, men have therapy, too
Address uncertainties about therapy	<ul style="list-style-type: none"> • What will I hear from others in the group? • Will what I say be kept confidential? • Will it be safe? • Will people judge me? • Will they freak out about what I say? • I feel worried about what to say and about being completely honest - will there be repercussions? • Will the therapist judge me? <ul style="list-style-type: none"> ○ The therapist listened to me ○ The therapist was not surprised or upset by the things I said ○ I was treated positively, respectfully and with compassion • Talking about mental health is useful and will help - there is an evidence base for this

Note: The above comments were recorded verbatim during a focus group of N=2 people who were accessing the Psychological Therapies Service in the team in which the video was created.

Table C2. Summary of feedback from clinician focus group

Theme	Details
The process of accessing therapy	<ul style="list-style-type: none"> Acknowledge where the service user is at (they have discussed their needs with their care coordinator and been referred for psychological therapy) and where they are going (the next step will be to come to an initial assessment meeting, to help think about how psychological therapy might be able to help them). This could include an animation/ infographic on-screen.
What to expect at the initial assessment	<ul style="list-style-type: none"> Meeting with 1 or 2 people in an NHS building. Usually takes place over one appointment, sometimes more. Appointments usually last about an hour. Define the word 'assessment': <ul style="list-style-type: none"> It's about the therapist getting to know the service user. It's a chance for the service user to say something about themselves and their problems, in their own words. They don't have to describe all their difficulties or disclose everything now. It's not about delving into their past and can be focussed on now. It is about thinking what their main difficulties are and whether psychological therapy can help with this. The therapist is there to listen but will ask questions about difficulties and how they have made you feel. They're not there to analyse you, just to get to know you! You may not get offered therapy after assessment if not appropriate - may not be right time, you may be referred on to another service, etc. This section of video could include clips/images of the CMHT building/ waiting room/therapy room/art therapy rooms, etc., to provide service users with an image of where they will be seen
Who are therapists?	<ul style="list-style-type: none"> Therapists are people, too! They are good at listening and want to help other people. They have had formal training and are regulated by the Health and Care Professions Council, so they are qualified to help people with mental health difficulties. Building a relationship with a therapist is an important part of therapy. The different kinds of therapists you might meet with at your first assessment are psychologists, art therapists, nurses (any others). They might be a man or a woman. If you are offered therapy, the person you meet for assessment may not be the person you work with - it depends on the type of therapy you need
What is therapy?	<ul style="list-style-type: none"> Therapy is about working with another person (therapist) to talk about difficult things in your life and how these difficulties have affected you. You might be asked to talk about things you think or how you feel, or you

	<p>might be asked to work to express your feelings e.g. through art.</p> <ul style="list-style-type: none"> • You might be seen individually or as part of a group. • You will get an opportunity to talk about different therapies and options when you attend your initial appointment. • A common theme of all therapy is that it doesn't last forever - your therapist will help you to think about how many sessions of therapy will be helpful for you. • Therapy looks different for different people. • This section of the video could include a link to different therapies section of AWP website.
Demystifying therapy/ debunking myths	<ul style="list-style-type: none"> • It's ok to cry • Therapist gets called by first name • Therapists are not there to "analyse you"/ do things to you • Therapists don't aim to create a power imbalance • Client's have a say in what happens to them - they're in charge • Therapists qualified but not experts - you bring your own expertise • Therapy can feel weird, it's a bit of a one-sided conversation at times • Give examples of the kinds of problems people bring to therapy • Give examples of the kind of questions that get asked in an initial assessment appointment • Give a definition of what the word 'assessment' means • This section of the video could be service-user led, with individuals talking about personal experiences of coming to an initial assessment and how they found it
Confidentiality and consent	<ul style="list-style-type: none"> • Explain confidentiality • Use the video to give all necessary information to help people give informed consent
Engender hope	<ul style="list-style-type: none"> • Therapy is recommended in clinical guidelines for lots of different mental health problems • There is a good chance therapy will help with your difficulties

Note: The above comments were recorded verbatim during a focus group with N=4 clinicians working for the Psychological Therapies Service in the team in which the video was created.

APPENDIX E: VIEW project - Semi-structured interview schedules

Interview schedule A - Service user interview schedule

Thank you for helping to make this video about therapy. Please answer the following questions based on your experiences of meeting with a therapist. It may help you to take a moment to remember what it was like attending your initial assessment appointment.

1. What was it like the very first time you met with a therapist? What did you think, how did you feel, what did you do, and what did you expect?
2. What was it like in your very first appointment? What kinds of things did you talk about? What kinds of things did the therapist say and what kinds of things did you say?
3. What was the therapist like when you first met with them? Was it how you expected?
4. When you met with the therapist, did they make you feel safe, listened to or understood? If so, how?
5. Did you feel like you were in control during your very first appointment with a therapist? If so, what made you feel this way?
6. How did the therapist help you to think about what kind of therapy would be helpful for you?
7. Based on your experience, how would you explain what therapy is to someone else?
8. Is there anything you wish you'd known before your first appointment with a therapist?
9. Is there anything you had thought about therapy that turned out not to be true?
10. What advice would you give to someone meeting with a therapist for the first time?
11. Why would you recommend therapy to others?
12. What's been the best thing about having therapy? What's been the biggest change in your life?

Interview schedule B - Therapist interview schedule

Thank you for agreeing to appear in this video. Please try to answer the following questions in a way that a layperson could understand, without using jargon.

1. What is psychological therapy? What is an initial assessment?
2. What do you do at an initial assessment appointment?
3. What do you do after an initial assessment appointment?
4. What would you like to say to someone who is watching this video and is about to attend their very first therapy appointment?
5. What would you like someone attending therapy to know before they attend?
6. Are there any myths about therapy you would like to challenge? If so, what and why?
7. What would you like someone attending therapy to know about their therapist and the therapeutic relationship?
8. How common are mental health problems? How are mental health difficulties common or normal?
9. How and why is psychological therapy effective?

APPENDIX F: VIEW project - Final script

Table E1. Full script for VIEW project, including edit notes

SECTION 1 - INTRODUCTION				
Description			Duration	Text
On screen text/ music			00:00:05	<ul style="list-style-type: none">• “A video about psychological therapy”• Play music• AWP logo/ University of Bath logo• Text overlay with uplifting/non-NHS footage in background• Title appears with the logos against background
Narrator/Presenter (Music in background)			00:00:12	<p>“This is a video for people referred for psychological therapy. We hope that it will give you a better idea of what to expect when you attend your first appointment with a therapist.</p> <p>We know that often, people don’t know what to expect when they come to an appointment and that this can be a scary or confusing time.”</p>
Service user quotes:				
Person	Start	End	Duration	Text
D	NA	NA	00:00:02	<p>“I was a little apprehensive when I first met with my therapist.”</p> <p>Note: Have clip of therapy session in background while the above quote is narrated. Words to appear on screen</p>
A	00:04:17	00:04:20	00:00:03	“I don’t think I knew what to expect.”
B	00:57:43	00:57:52	00:00:09	“It was the first time I’d done any sort of therapy, so I didn’t really know what to expect and I was a bit nervous about talking about all my issues.”
E	02:18:26	02:18:27	00:00:01	“It was a bit intimidating to start with.”
C	01:23:46	01:23:48	00:00:02	“I hadn’t a clue!”
SECTION 2 - WHAT IS PSYCHOLOGICAL THERAPY?				
Description			Duration	Text
On screen text/ music			00:00:05	<ul style="list-style-type: none">• “What is psychological therapy?”• Play music• Lay over neutral background
Narrator/Presenter (Music in background)			00:00:11	<p>“Psychological therapy involves meeting with another person, a therapist, to talk about difficult things in your life. You may be asked to talk about the things you think or how you feel. You may speak about the past, or you may speak about what’s</p>

				going on for you right now. You may be seen individually, with members or your family, or as part of a group.”
Service user quotes:				
Person	Start	End	Duration	Text
A	00:13:55	00:14:12	00:00:17	“I would say that therapy is a partnership between the person seeking therapy and a professional who has lots of skills and knowledge.”
E	02:23:09	02:23:31	00:00:12	“I think that therapy is somebody who has some problems that they’d like to work through meeting with somebody who understands a bit more about things like psychology and different therapy approaches and those two people working together to look for solutions and look for how to help feel better.”
Therapist quotes:				
Person	Start	End	Duration	Text
Claire	01:44:30	01:44:47	00:00:17	“Psychological therapy is a general term that’s used for a range of different approaches.” Text: Dr Claire Williamson, Clinical Psychologist
Sarah	00:48:51	00:49:10	00:00:19	“We’re quite a big team, and within that team there’s psychologists, nurse therapists, art psychotherapists, family therapists, so there’s quite a lot of scope for finding the therapy that’s going to match your needs.” Text: Sarah Parkinson, Art Psychotherapist
SECTION 3 - WHAT TO EXPECT AT YOUR FIRST APPOINTMENT				
Description			Duration	Text
On screen text/ music			00:00:05	<ul style="list-style-type: none">• “What to expect at your first appointment”• Play music• Lay over neutral background
Narrator/Presenter (Music in background)			00:00:10	“Your first appointment will be with one, maybe two therapists for an initial assessment, usually in an NHS building. Most assessments take just one appointment and last about an hour, although sometimes it may take more than one appointment for the therapist to find out about the difficulties you have faced.”
Service user quotes:				
Person	Start	End	Duration	Text
D	NA	NA	00:00:10	“My first appointment consisted mainly of talking about my expectations from both myself and the

				therapist during our sessions. I explained a bit about myself and why I felt that I would benefit from therapy.”
A	00:06:14	00:06:21	00:00:07	“I left the first meeting feeling much calmer than when I went in”
Description			Duration	Text
Narrator/Presenter			00:00:13	“At the start of your assessment, the therapist will check that you are happy to speak with them. They will ask you questions about the problems in your life and how they have made you feel. You don't have to talk about every bad thing that has ever happened to you. You'll be in control.”
Service user quotes:				
Person	Start	End	Duration	Text
E	02:20:57	02:21:07	00:00:10	“The therapist was very reassuring and calm with me and sort of sensitive to what I needed and whether I was intimidated or anything like that.”
B	01:00:46	01:00:53	00:00:09	“I think the therapist was very good at understanding things when I talked about my mental health problems and stuff like that.”
Description			Duration	Text
Narrator/Presenter			00:00:09	“The things you say to the therapist will be kept confidential. This means the therapist will try to keep everything you say private. Some things can't be kept private, such as if the therapist is worried about you or other people in your life. If this is the case, the therapist has a responsibility to keep you and others safe, and they will talk to you about sharing information.”
Service user quotes:				
Person	Start	End	Duration	Text
A	00:06:29	00:06:53	00:00:24	“My confidence in therapy increased by the fact that the therapist talked about how everything was confidential and also explained that if they had a concern they would go back to the team of people who were caring for me.”
C	01:29:55	01:30:00	00:00:05	“It's a safe place. A truly safe place to say what you want.”
Description			Duration	Text
Narrator/Presenter			00:00:09	“The most important part of the assessment is to help you decide whether therapy is the right thing for you at this moment in your life. Your therapist will

				help you to think about this.”
Service user quotes:				
Person	Start	End	Duration	Text
D	NA	NA	00:00:05	“The therapist first addressed the issues which I felt I needed help with, then gave me the options available to me so we could discuss each one.”
C	01:27:50	01:28:00	00:00:10	“I think towards the end of the session, probably in the last 10 minutes, she said “we are able to help you” and that was a massive statement.”
Description			Duration	Text
Narrator/Presenter			00:00:09	“Sometimes, it can be helpful to think about what you want your initial appointment to be like.”
Service user quotes:				
Person	Start	End	Duration	Text
A	00:17:10	00:17:25	00:00:15	“If you have some idea about key feelings that you have, then you might want to make some notes and take them along.”
B	01:08:35	01:08:46	00:00:11	“Don’t feel too stressed about it. There’s nothing too bad about what’s going to happen. The first time you meet them its probably going to be you laying out your aims for therapy.”
C	01:37:23	01:37:31	00:00:08	“There’s nothing wrong in asking if you can have a chaperone - could be a partner, could be a friend.”
E	02:24:45	02:24:47	00:00:00	“Be brave and give it a go.”
SECTION 4 - OTHER THINGS TO KNOW ABOUT THERAPY				
Description			Duration	Text
On screen text/ music			00:00:05	<ul style="list-style-type: none"> • “Other things to know about therapy” • Play music • Lay over neutral background
Narrator/Presenter			00:00:05	“Mental health problems are very common.”
Therapist quotes:				
Person	Start	End	Duration	Text
Chris	02:07:00	02:00:21	00:00:21	<p>“Mental health problems are extremely common, you often see on the news statistics quoted like one in four people will have a mental health problem in their lifetime, and the reality is that many, many people will experience mental health difficulties, but it’s not always easy for people to talk about that.”</p> <p>Text: Dr Chris Gillmore, Clinical Psychologist</p>
Service user quotes:				
Person	Start	End	Duration	Text

C	01:38:13	01:38:36	00:00:23	"Mental health was considered to be a madness, or a figment of your imagination. Well it's not. It's a serious illness, it affects the brain, it affects the brain so it affects the way you think, the way you act and the way you plan your life."
Description			Duration	Text
Narrator/Presenter			00:00:05	"Therapy is about working together"
Service user quotes:				
Person	Start	End	Duration	Text
A	00:10:15	00:10:35	00:00:20	"Initially I felt as if, because of my understanding or lack of understanding of therapy, therapy was something that was going to be done to me, and there's a huge shift in understanding that therapy's done with you."
Therapist quotes:				
Person	Start	End	Duration	Text
Claire	01:50:44	01:50:47	00:00:03	"It is very much a collaborative process and we'd be guided by the client." Text: Dr Claire Williamson, Clinical Psychologist
Sarah	00:29:29	00:29:32	00:00:03	"You're the expert of your own recovery, in a way." Text: Sarah Parkinson, Art Psychotherapist
Description			Duration	Text
Narrator/Presenter			00:00:05	"Therapists are just people"
Service user quotes:				
Person	Start	End	Duration	Text
E	02:24:06	02:24:22	00:00:16	"People who are working as therapists aren't there to scare people, they're there to be nice to everybody, and that helps me feel better about meeting new people and meeting others who work in therapy."
Therapist quotes:				
Person	Start	End	Duration	Text
Sarah	00:29:29	00:29:32	00:00:03	"You know, we're all ordinary people as well." Text: Sarah Parkinson, Art Psychotherapist
Description			Duration	Text
Narrator/Presenter			00:00:05	"Sometimes, therapy can feel hard"
Service user quotes:				
Person	Start	End	Duration	Text
C	01:41:22	01:41:26	00:00:04	"It's a journey. And sometimes that journey is more

				difficult than others.”
Therapist quotes:				
Person	Start	End	Duration	Text
Chris	02:05:22	02:05:39	00:00:17	“Sometimes you can come to therapy and it can be a very positive experience and it doesn’t have to be raking over things which are difficult and painful for you, but sometimes you do have to talk about things that are difficult, but it’s not always the case.” Text: Dr Chris Gillmore, Clinical Psychologist
Sarah	00:29:29	00:29:32	00:00:03	“It’s alright to have a laugh, you know, it can be enjoyable, too.” Text: Sarah Parkinson, Art Psychotherapist
Description			Duration	Text
Narrator/Presenter			00:00:05	“Psychological therapy works”
Therapist quotes:				
Person	Start	End	Duration	Text
Claire	01:57:02	01:57:09	00:00:07	“There’s a lot of evidence from research about the effectiveness of psychological therapies.” Text: Dr Claire Williamson, Clinical Psychologist
Service user quotes:				
Person	Start	End	Duration	Text
C	01:31:12	01:31:22	00:00:10	“There’s just so many different therapies that are available through the therapist that if one’s not working for you there are many others that will.”
E	02:25:48	02:26:01	00:00:13	“I would recommend it because it really helps a huge range of people, and because it will give you skills that will be there for the rest of your life, and they are really valuable skills.”
Description			Duration	Text
Narrator/Presenter			00:00:05	“Psychological therapy could change your life”
Service user quotes:				
Person	Start	End	Duration	Text
D	NA	NA	00:00:08	“I would recommend therapy to others as it enables you to understand how your life’s journey affects the person you become as an adult. It also helps you put your insecurities into perspective and value your worth.”
C	01:29:55	01:30:00	00:00:05	“It’s a safe place. A truly safe place to say what you want.”
B	01:11:07	01:11:23	00:00:16	“I think largely it’s helped me just talk about my

				issues and more monitoring on what's going on for me, and if I need help, and it's got me used to meeting people who've had the same issues and talking with them."
E	02:19:39	02:19:47	00:00:09	"It was finally giving me the space to think about my health and my mental health in a way that I hadn't had the opportunity to in quite a while."
A	00:18:00	00:18:19	00:00:19	"I have no doubt that, even though I haven't finished my course of therapy, I'm surviving better."
SECTION 5 - CREDITS				
<ul style="list-style-type: none"> • Service users: Steven, Asa, Neil, Hazel, Phoebe • Therapists: Dr Chris Gillmore, Dr Claire Williamson, Dr Jo Keightly, Dr Hanna van der Woude, Sarah Parkinson, Hazel Carrick, Dawn Lindsay • Music: 'Red Admiral' by Matt McGowan • Filming and editing: The Audio Visual Unit, University of Bath • Production and Direction: Dr Andrew Merwood • "With thanks to all patients and clinicians who contributed to the design and production of this film." 				

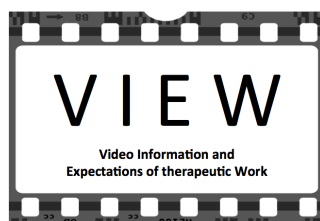
Note: Narration sections scripted based on feedback from focus groups; all quotations from service users and therapists are their own words; Start and End times refer to the full, unedited video clips from which quotations were taken; Duration is the approximate duration of each clip; full transcripts from the clinician and service user interviews are not presented.

APPENDIX G: VIEW project - Information Video (DVD)

Hard copy of DVD to
be inserted here

APPENDIX H: VIEW project - Questionnaire booklet

(Includes Questionnaires, Information Sheet, Consent Form & Debrief Sheet)



Avon and Wiltshire **NHS**
Mental Health Partnership NHS Trust



Questionnaire Booklet

Project title:

Video Information and Expectations of therapeutic Work (VIEW).

Instructions:

Thank you for agreeing to take part in this project. Please follow these instructions:

1. Please watch the enclosed video about psychological therapy. The video can be played using a DVD player or laptop and will last approximately 5 minutes. You may wish to watch this video in a quiet place, at a time when you will not be disturbed.
2. Immediately after watching the video, please complete the two questionnaires included in this booklet. Please try to answer all questions as accurately as possible. If you are able to, please complete these questionnaires on your own and in a quiet place where you will not be disturbed. It should take no longer than 20 minutes to complete these questionnaires.
3. After completing all questionnaires, please return the signed consent form and this questionnaire booklet to the project team as soon as possible. You can do this via post using the stamped-addressed envelope provided, or in person when you next attend Bath NHS House.

Questionnaire 1: Post-video questionnaire

Please do not complete this questionnaire until you have watched the video.

Please indicate how strongly you agree with each of the following statements by drawing an X on each line. For example, if you totally disagree with a statement you may choose to draw your X on the line directly above the words "totally disagree". If you totally agree with a statement you may choose to draw your X directly above the words "totally agree". If you slightly agree with a statement you may choose to draw your X somewhere on the line between "totally disagree" and "totally agree".

Draw your X anywhere on the line, in the place that best reflects how much or how little you agree with each statement.

Part 1. The following questions are about your knowledge of psychological therapy

1. Since viewing the video, I know more about what to expect when I attend my first appointment with a therapist:

Totally disagree *Totally agree*

2. Since viewing the video, I know more about the kind of work therapists do:

Totally disagree *Totally agree*

3. Since viewing the video, I know more about what psychological therapy is:

Totally disagree *Totally agree*

4. Since viewing the video, I know more about the different kinds of therapy I may be offered:

Totally disagree *Totally agree*

5. Since viewing the video, I know more about confidentiality and how this affects me:

Totally disagree *Totally agree*

Part 2. The following questions are based on how you feel about psychological therapy

6. Since viewing the video, I feel that psychological therapy is more likely to help me to make changes in my life:

Totally disagree

Totally agree

7. Since viewing the video, I feel more hopeful about recovering from my current difficulties:

Totally disagree

Totally agree

8. Since viewing the video, I feel less anxious about attending my first appointment with a therapist:

Totally disagree

Totally agree

Part 3. Please provide any additional feedback on the video in the box below.

Thank you for completing this questionnaire.

Questionnaire 2: Participant demographic information

The following questions are about your background and identity. Your answers to these questions are for information purposes only. They will be kept anonymous and will not affect your current or future healthcare in any way. Please answer the following questions about yourself as accurately as possible. If you are uncertain of an answer please give the answer that best describes you.

What is your age? _____ years

What is your gender? _____

What is your ethnic group?

Choose one option that best describes your ethnic group or background (please tick)

White

1. English / Welsh / Scottish / Northern Irish / British
2. Irish
3. Any other White background

Mixed

4. White and Black Caribbean
5. White and Black African
6. White and Asian
7. Any other mixed background

Asian or Asian British

8. Indian
9. Pakistani
10. Bangladeshi
11. Any other Asian background

Black or Black British

12. Caribbean
13. African
14. Any other Black background

Other Ethnic Groups

15. Chinese
16. Any other ethnic group, please describe: _____

What is your employment status?

Choose one option that best describes your current level of employment (please tick)

1. Unemployed
2. On unpaid leave from work (e.g. long-term sick leave)
3. On paid leave from work (e.g. long-term sick leave)
4. In part-time employment
5. In full-time employment
6. Retired
7. Other, please describe: _____

If you are currently in any type of employment, what is your job? _____

How many years did you spend at school? _____ years

What is your highest level of educational qualification?

Please indicate below (e.g. GCSE, NVQ, A-Level, Degree, Masters, Doctorate)

Have you ever seen a therapist before?

1. Yes
2. No

If yes, what was this for? _____

If yes, when was the last time you saw a therapist? _____

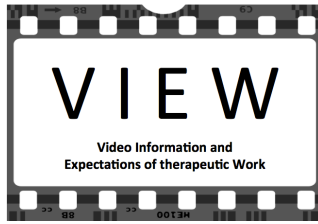
If yes, in which of these settings did you see a therapist? (Tick all that apply)

1. At school or while in education
2. At work or via your employer
3. At a GP via a counseling service
4. In an NHS primary care setting (e.g. an IAPT service, such as Sirona or LIFT psychology)
5. In an NHS secondary care setting (e.g. a Psychological Therapies Service, such as BANES Therapy Team)
6. In an NHS specialist setting (e.g. in general hospital or on a mental health ward)
7. Privately, outside of the NHS
8. Any other setting, please describe: _____

How would you describe the difficulties that led to your referral for psychological therapy?

Please describe briefly in the box below:

Thank you for completing this questionnaire.



Participant Information Sheet

Project title:

Video Information and Expectations of therapeutic Work (VIEW).

Invitation:

You are invited to take part in a project evaluating a new video about psychological therapy.

Why have I been contacted?

You have been contacted as you have been referred to the Bath and North East Somerset (BANES) Therapy Team. All people referred to this service are being invited to take part. Approximately two weeks after you have received this information leaflet you will be contacted by the team conducting this project to discuss whether you would like to take part, unless you have already contacted the project team yourself or have already chosen to participate.

Who is conducting this project?

The project co-ordinator is Dr Andrew Merwood, a Trainee Clinical Psychologist at the University of Bath. The project is being supervised by two qualified Clinical Psychologists, Dr Chris Gillmore (based within BANES Therapy Team) and Dr Catherine Hamilton-Giachritsis (based at the University of Bath). The project is being supported by Psychologists and Therapists working for BANES Therapy Team. People who have personal experience of using this service have also helped us to design this project.

What will happen?

You will be asked to watch a short video about psychological therapy. This video will include information about what to expect when you first meet with a therapist from BANES. After you have watched this video, you will be asked to complete two short questionnaires. These questionnaires will ask for your opinions about the video, about your current mental health difficulties, and about your background and identity.

How long will it take?

It will take roughly 20-30 minutes to watch the video and complete all questionnaires.

Do I have to take part?

You do not have to take part in this project. Your participation is voluntary and your decision on whether or not to participate will not affect your current or future healthcare in any way. Basic information about psychological therapies will have already been sent to you in a leaflet from the BANES Therapy Team. However, because the video about psychological therapy is new, you may find that it provides you with some additional information about psychological therapy before you first meet with a therapist from BANES Therapy Team. Participating in this project also has the potential to help others in your situation. If you choose to take part, you will be asked to sign and return the Consent Form together with the questionnaires.

You may decide to stop participating in this project at any time and without explanation. You have the right to ask that any data you have supplied up to that point be destroyed. You have the right to have your questions about this project answered. If you have any questions as a result of reading

this Information Sheet, you can contact a member of the project team before taking part. Contact details are provided at the end of this Information Sheet.

Are there any benefits or risks?

The main benefit of taking part in this project is that you will have an opportunity to find out more about psychological therapy before meeting with a therapist. This is in addition to basic information about psychological therapies that you will already have received in a leaflet. This is in line with clinical guidelines stating that people should be provided with information about therapy before accessing psychology services.

There are no known risks involved with taking part in this project. However, if your participation causes you distress then you can speak to a member of the project team using the contact details below. You will also have an opportunity to discuss any distress at your first meeting with a therapist. If you need to talk to someone urgently, you can contact the BANES Crisis Team on **01225 362814** or the Samaritans on **8457 90 90 90**. These numbers can be contacted 24 hours a day, seven days a week.

Will I be reimbursed?

Your participation in this project is voluntary. We are therefore unable to offer you any compensation for your time. However, we will be extremely grateful, as by choosing to take part you will help us to improve the experience of people accessing the BANES Therapy Team.

Confidentiality and anonymity:

The information collected for this project will be treated as confidential material. Reports, publications or presentations arising from this project will not contain any identifiable information (i.e. your name, address and date of birth will not be included), ensuring that you remain anonymous. To maintain anonymity, you will be assigned a unique ID number that will be used to identify you during data analysis. Only the project team will know which ID number matches your name and the list containing this information will be stored securely in a locked filing cabinet. This list will be destroyed once this project is completed. Anonymous data will be kept for 10 years, in line with current guidelines.

Contact details:

For further information about this project, or if you have any questions or concerns, please contact the project co-ordinator, Dr Andrew Merwood, via email on: andrew.merwood@nhs.net. You can also contact the BANES Therapy Team via telephone on: 01225 731563. If you are contacting the BANES Therapy Team about this project, please ask to speak to Dr Chris Gillmore.

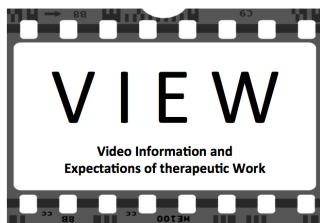
What next?

If you are happy to take part in this project, please complete the enclosed consent form, watch the enclosed video and complete the enclosed questionnaires. Instructions on what to do are provided at the beginning of the Questionnaire booklet.

Once completed, the consent form and questionnaires should be returned via post using the stamped-addressed envelope provided, or in person to Bath NHS House.

After you have completed and returned your consent form and questionnaires, your participation is complete. However, you have the option to be contacted again in future to hear about the results of this project. You can indicate whether you would like to be contacted about this on your consent form.

When you complete and return your questionnaires, you should keep hold of this Information Sheet for future reference. If you have any questions or concerns after participating in this project, you can contact the project team using the contact details provided above.



Participant Consent Form

Project title: Video Information and Expectations of therapeutic Work (VIEW)

Name of Project Co-ordinator: Dr Andrew Merwood

Project Supervisors: Dr Chris Gillmore and Dr Catherine Hamilton-Giachritsis

Please initial all boxes:

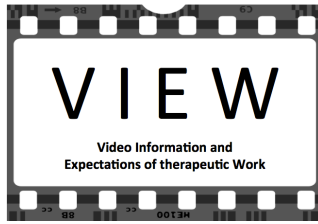
1. I confirm that I have read and understand the Information Sheet for the above project. I have had the opportunity to consider the information, ask questions and have had any questions answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my healthcare being affected. ☐
3. I would like to be contacted at the end of this project to find out about the results. (Only put your initials here if you would like to be contacted) ☐
4. I agree to take part in the above project. ☐

If you are happy to take part, please sign below:

Name of Participant

Date

Signature



Participant Debrief Sheet

Project title:

Video Information and Expectations of therapeutic Work (VIEW).

Debrief:

Thank you for taking part in this project. Your participation is now complete and we are very grateful for your time and assistance.

The aim of this project is to see whether an information video can improve a person's knowledge and expectations about therapy before they first see a therapist. Your participation will help us to assess whether the information video we have created has been successful in achieving this.

The data you have provided will remain anonymous and confidential, and will now be analysed by the project team. Once this is completed, the project team will feed back the results to the BANES Therapy Team. If you indicated that you would like to hear about the results of this project, the project team will also contact you at this stage.

Now that you have taken part in this project, you should return your completed consent form and questionnaires via post, or in person to Bath NHS House. You should keep hold of the Information Sheet for your future reference. If you wish to contact the project team with any questions or queries, then you can do so using the contact details provided on the Information Sheet.

APPENDIX I: VIEW project - Raw audit data

Table H1. Raw audit data for those who viewed the information video (N=5) vs. those who did not view the video (N=5).

Identifier	Gender	Age	Ethnicity	Session						Notes
				1	2	3	4	5	6	
Viewed video: Referred Nov 2015 - Apr 2016										
1	F	64	White - British	A	A	A	D	A	C	-
2	M	64	White - British	A	A	A	A	A	A	-
3	F	53	White - British	A	A	D	-	-	-	Discharged after 3 appointments
4	F	51	Asian - Indian	D	A	A	A	-	-	Only seen 4 times at time of audit
5	M	60	White - British	A	A	-	-	-	-	Only seen 2 times at time of audit
Did not view video: Referred Nov 2014 - Apr 2015										
6	M	36	White – Other	A	A	A	A	D	D	
7	F	28	White- British	A	C	A	D	D	D	
8	M	43	White - British	A	A	A	A	D	A	
9	F	38	Not known	A	A	A	A	D	-	Discharged after 5 appointments
10	M	25	White - British	A	D	D	D	D	-	Discharged after 5 appointments

Note: For Gender M=male, F=female; Age presented in years; For Sessions A = attended, D = Did Not Attend, C = Cancelled in advance by either Patient or Therapist; calculations of therapy attendance rates (Chapter 2, Table 1) were calculated as the percentage of scheduled appointments attended after accounting for cancellations and/or discharge (e.g., for Person 1, the percentage of attended appointments was 4/5, with the cancelled appointment excluded from this calculation).

APPENDIX J: Author guidelines - *Behavioural and Cognitive Psychotherapy*

Journal submission guidelines downloaded as PDF on 18/05/2016 from:
http://assets.cambridge.org/BCP/BCP_ifc.pdf

Page 1/7:

BEHAVIOURAL AND COGNITIVE PSYCHOTHERAPY

EDITORIAL OFFICE

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Editorial Statement

Behavioural and Cognitive Psychotherapy is an international multidisciplinary journal for the publication of original research of an experimental or clinical nature, which contribute to the theory, practice and evaluation of behaviour therapy. As such, the scope of the journal is very broad and articles relevant to most areas of human behaviour and human experience which would be of interest to members of the helping and teaching professions will be considered for publication.

As an applied science the concepts, methodology and techniques of behavioural psychotherapy continue to change. The journal seeks both to reflect and to influence those changes.

While the emphasis is placed on empirical research, articles concerned with important theoretical and methodological issues as well as evaluative reviews of the behavioural literature are also published. In addition, given the emphasis of behaviour therapy on the experimental investigation of the single case, the journal from time to time publishes case studies using single case experimental designs. For the majority of designs this should include a baseline period with repeated measures; in all instances the nature of the quantitative data and the intervention must be clearly specified. Other types of case report can be submitted for the Brief Clinical Reports section.

The following types of articles are suitable for Behavioural and Cognitive Psychotherapy:

- Reports of original research employing experimental or correlational methods and using within or between subject designs.
- Review or discussion articles that are based on empirical data and that have important new theoretical, conceptual or applied implications.
- Brief reports and systematic investigations in single case employing innovative techniques and/or approaches.

Articles should concern original material that is neither published nor under consideration for publication elsewhere, this also applies to articles published in languages other than English.

SPECIAL SECTIONS OF THE JOURNAL

Brief Clinical Reports

Material suitable for this section includes unusual case reports, accounts of potentially important techniques, phenomena or observations; for example, descriptions of previously unreported techniques, outlines of available treatment manuals, descriptions of innovative variations of existing procedures, details of self-help or training packages, accounts of the application of existing techniques in novel settings and so on. The brief clinical reports section is intended to extend the scope of the clinical section. Submissions for this section should be no longer than 1800 words and should include no more than six references, one table or figure, and an extended report that contains fuller details. If the report describes more than one study these limits can be exceeded, please make this clear to the Editorial Office in the cover letter if this is the case. There are no restrictions on the size or format of the extended separate document. This may, for instance, be a treatment manual or a fully detailed case report, therapy transcript and so on. If a submission is accepted for publication as a Brief Clinical Report, the author(s) must be prepared to send the fuller document to those requesting it, free of charge or at a price agreed with the editor to reflect the cost of materials involved. The extended document will also be mounted on [the journal's website](#) and therefore we require an electronic version in Word or PDF format (this material will not be copyedited).

Empirically Grounded Clinical Interventions

This section is intended for reviews of the present status of treatment approaches for specific psychological problems. It is intended that such articles will draw upon a combination of treatment trials, experimental evidence and other research, and be firmly founded in phenomenology. It should take account of, but also go beyond, treatment outcome data.

Accelerated Publication

The accelerated publication section is intended to accommodate a small number of important papers. Such papers will include major new findings for which rapid dissemination would be of considerable benefit and impact. For example: reports of the results of important new clinical trials; innovative experimental results with major implications for theory or practice; other work of unusually high calibre. In order to respond to rapid development in the field, the journal includes an accelerated publication section. Authors wishing to submit manuscripts for the accelerated publication section must briefly indicate in a covering letter their reasons for requesting accelerated publication and should also indicate whether they wish the manuscript to be transferred to the normal (non-accelerated) review process if rejected for either of the stages of accelerated review outlined below.

Accelerated review will proceed in two stages:

1. In the first stage, an editor and a reviewer will decide whether, in principle, the study merits accelerated publication. Authors will be informed within 14 days of receipt of this stage if not passed, and the manuscript will be withdrawn at that stage or continue in the normal (non-accelerated) review track, depending on the preference specified by the author(s).
2. Once passed in principle, the paper will then be subject to peer-review by the same reviewers as in stage 1 using normal journal criteria. At the end of this stage, manuscripts will be either accepted (with or without minor alterations) or rejected for accelerated publication.

Acceptance will depend on unanimity between the reviewer and editor. If accelerated publication is ruled out at this stage, a manuscript will revert to normal review if this option has been indicated by the author(s), otherwise it will simply be returned.

In order to maximize the speed at which accelerated review proceeds, details of decisions on accelerated publication will be restricted to whether the manuscript has been accepted or not. If a manuscript is transferred to the non-accelerated review track, the normal journal conventions regarding review decisions will be adhered to. The entire accelerated review process from receipt to final decisions should take an average of 2 weeks. Articles accepted in this section will appear in the first possible printed issue of the journal.

MANUSCRIPT SUBMISSION IN FRENCH, SPANISH, GERMAN OR ITALIAN

To reflect the international nature of the journal, we will allow submission in French, Spanish, German or Italian for those who wish to submit papers to the journal but who may not have English as a first language. This recognizes the fact that authors who do not normally write in English may be reluctant to undertake the difficult and time consuming task of translation when they have little or no idea of the acceptability of the material. We will now seek to provide some preliminary information concerning the likely acceptability of an article prior to translation into English. Initial submissions to this journal can, as of now, be made in French, Spanish, German or Italian. Such submission will be sent to an assistant editor fluent in the submission language for an initial evaluation. If that editor and their referees regard the paper as viable, the author will be encouraged to submit a translation for consideration. International language editors and referees' reports will inform the final review process. If the paper is accepted in English translation, the journal will also publish the original language abstract alongside the English one. However, please note that we do not wish to receive submissions of articles previously accepted for publication in a non-English language journal. We will allow submissions of non-English translations subsequent to publication in Behavioural and Cognitive Psychotherapy provided permission from the BABCP as copyright holder has been obtained and appropriate acknowledgement to the original publication in Behavioural and Cognitive Psychotherapy is made. Our policy is to publish only original articles.

PREPARING YOUR MANUSCRIPT

Articles must be under 5,000 words at the point of submission including references (except for Brief Clinical Reports, please see separate instructions). Manuscripts describing more than one study may exceed this, however please mention this in your cover letter to make it clear to the editorial office. Manuscripts should be double-spaced throughout allowing wide margins all round.

Authors who want a blind review should indicate this at the point of submission of their article, omitting details of authorship and other identifying information from the main manuscript. Submission for blind review is encouraged.

All submissions should be in digital format and submitted via this portal:

<http://mc.manuscriptcentral.com/babcp>

MANUSCRIPTS SHOULD CONFORM TO THE FOLLOWING SCHEME

a. Title page. The title should phrase concisely the major issues. Author(s) to be given with departmental affiliations and addresses, grouped appropriately. A running head of no more than 40 characters should be indicated, plus 4 keywords.

b. Abstract. The abstract should be structured under the headings: Background, Aims, Method, Results, Conclusions. It should include up to six key words that could be used to describe the article. This should summarize the article in no more than 250 words.

c. Text. This should begin with an introduction, succinctly introducing the point of the paper to those interested in the general area of the journal. The appropriate positions of tables and figures should be indicated in the text. Footnotes should be avoided where possible.

d. Reference note(s). A list of all cited unpublished or limited circulation material, numbered in order of appearance in the text, giving as much information as possible about extant manuscripts.

e. References. These should follow APA guidelines. References within the text should be given in the form of Jones and Smith (1973) or (Jones and Smith, 1973). When there are three or up to and including five authors the first citation should include all authors; subsequent citations should be given as Williams et al. (1973). Authors with the same surname should be distinguished by their initials. All citations in the text should be listed in strict alphabetical order according to surnames. Multiple references to the same author (s) should be listed chronologically, using a, b, etc., for entries within the same year. Formats for journal articles, books and chapters should follow these examples:

- Kaltenthaler, E., Parry, G. and Beverley, C. (2004). Computerised cognitive behaviour therapy: a systematic review. *Behavioural and Cognitive Psychotherapy*, 32, 31–55. doi:10.1017/S135246580400102X.
- Tharp, R.G. and Wetzel, R.J. (1969). *Behaviour Modification in the natural environment*, New York: Academic Press.

- Roskies, E. and Lazarus, R.S. (1980). Coping theory and the teaching of coping skills. In P.O. Davidson and S.M. Davidson (Eds), Behavioural medicine: changing health lifestyles. New York: Brunner/Mazel.

f. Footnotes. The first, and preferably only, footnote will appear at the foot of the first page of each article, and subsequently may acknowledge previous unpublished presentation (e.g. dissertation, meeting paper), financial support, scholarly or technical assistance, or a change in affiliation. A concluding (or only) paragraph must be the name and full mailing address of the author to whom reprint requests or other enquires should be sent.

g. Tables and Figures

Manuscripts should not usually include more than five tables and/or figures. Tables and Figures should appear at the end of the main text and references, but have their intended position within the paper clearly indicated in the manuscript. They should be constructed so as to be intelligible without reference to the text. Tints and shading may be used, but colour should be avoided unless essential. Although colour is possible in the online version, when designing a Figure please ensure that any line variation/distinction demonstrated by colour can still be noted when in black and white so as to be decipherable in the printed issue. Tables should be numbered and given explanatory titles. Numbered figure captions should be provided. Please see the Cambridge University Press Artwork guidelines [here](#) for more details on creating artwork.

h. Required Sections

Acknowledgements: You may acknowledge individuals or organisations that provided advice, support (non-financial). Formal financial support and funding should be listed in the following section.

Conflict of interests: Please provide details of all known financial, professional and personal relationships with the potential to bias the work. Where no known conflicts of interest exist, please include the following statement: *“(Authors names) have no conflict of interest with respect to this publication.”*

Financial Support: Please provide details of the sources of financial support for all authors, including grant numbers. For example, *“This work was supported by the Medical research Council (grant number XXXXXX)”*. Multiple grant numbers should be separated by a comma and space, and where research was funded by more than one agency the different agencies should be separated by a semi-colon, with *“and”* before the final funder. Grants held by different authors should be identified as belonging to individual authors by the authors' initials. For example, *“This work was supported by the Wellcome Trust (A.B., grant numbers XXXX, YYYY), (C.D., grant number ZZZZ); the Natural Environment Research Council (E.F., grant number FFFF); and the National Institutes of Health (A.B., grant number GGGG), (E.F., grant number HHHH)”*. Where no specific funding has been provided for research, please provide the following statement: *“This research received no specific grant from any funding agency, commercial or not-for-profit sectors.”*

Note on blind review

Where conflict of interest and acknowledgements would compromise blind review, the identifiable information may be omitted from the main manuscript, but should be included on the separate title page which is not seen by reviewers. Within the main text it is acceptable to replace identifiable information by using XXXXXX or similar.

STYLE

Abbreviations where used must be standard. The Systeme International (SI) should be used for all units: where metric units are used the SI equivalent must also be given. Probability values and power statistics should be given with statistical values and degrees of freedom (e.g. $F(1,34) = 123.07$, $p < .001$), but such information may be included in tables rather than in the main text. Spelling must be consistent within an article, either using British usage (The Shorter Oxford English Dictionary), or American usage (Webster's new collegiate dictionary). However, spelling in the list of references must be literal to each publication. Details of style not specified here may be determined by reference to the Publication Manual of the American Psychological Association or the style manual of the British Psychological Society.

Where unpublished material e.g. behaviour rating scales, therapy manuals etc., are referred to in an article, copies should be submitted as an additional document (where copyright allows) to facilitate review.

ETHICAL STANDARDS

Where research involves human and/or animal experimentation, the following statements should be included (as applicable): *"The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, and its most recent revision."* and *"The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional guides on the care and use of laboratory animals."*

All manuscripts should indicate the nature of the ethical governance body, for example by providing ethics committee/audit committee approval reference numbers.

Behavioural and Cognitive Psychotherapy is committed to actively investigating any cases of suspected misconduct, even in the event of the manuscript being withdrawn. All manuscripts are screened for plagiarism before being accepted for publication. Behavioural and Cognitive Psychotherapy follows the COPE guidelines on retractions.

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All editors and reviewers are asked to disclose any conflict of interest when they are assigned a manuscript. If deemed necessary, alternative or additional reviews will be sought in order to maintain the balance of fair and through peer review.

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AUTHOR LANGUAGE SERVICES

Cambridge University Press recommends that authors have their manuscripts checked by an English language native speaker before submission; this will ensure that submissions are judged at peer review exclusively on academic merit. We list [a number of third-party services](#) specialising in language editing and / or translation, and suggest that authors contact as appropriate. Use of any of these services is voluntary, and at the author's own expense.

(Revised March 9th 2016)

APPENDIX K: Main Research Project - Procedures



This study used a mixed-methods approach used collect quantitative and qualitative data. This article deals with the quantitative arm of the study only, which used a between-subjects design to compare adults with and without ADHD classified as either high or low in social anxiety. Participants were recruited using a convenience sampling strategy (Section 1.3.2) and completed an Internet-based questionnaire comprising a number of psychometric measures (Section 1.3.3). Prior to completion of the questionnaire, participants were required to read an online information sheet and complete an online consent form. They were also asked to screen themselves against the study inclusion/exclusion criteria and were only eligible to participate if they were aged 18 years or over and if they did not have a diagnosis of an autism spectrum disorder or a history of acquired brain injury, since these conditions can affect social skills (Bellini, 2006; McDonald et al., 2008). Upon completion of the questionnaire, participants were provided with an online debrief and contact details for the lead researcher. Participation lasted approximately 20 minutes in total.

APPENDIX L: Main Research Project - Ethics and R&D Approvals

To reduce printing, only the initial approval letters are included. Three non-substantial amendments were made during the course of data collection, all of which were fully approved by the study sponsor and relevant ethics/ R&D committees. Details are available upon request.

1. NHS Research Ethics Committee Favourable Opinion

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East of Scotland Research Ethics Service (EoSRES) Research Ethics Service	
<p>TAyside medical Science Centre Residency Block Level 3 George Pirie Way Ninewells Hospital and Medical School Dundee DD1 9SY</p>	
<p>Dr Andrew Merwood Clinical Psychologist in Training University of Bath Clinical Psychology Research and Training, Department of Psychology University of Bath Bath, BA2 7AY</p>	<p>Date: 15 September 2015 Your Ref: Our Ref: DL/15/ES/0154 Enquiries to: Mrs Diane Leonard Direct Line: 01382 383871 Email: eosres.tayside@nhs.net</p>
<p>Dear Dr Merwood</p>	
<p>Study title:</p>	<p>Social anxiety in adults with ADHD: A result of cognitive bias?</p>
<p>REC reference:</p>	<p>15/ES/0154</p>
<p>Protocol number:</p>	<p>NA</p>
<p>IRAS project ID:</p>	<p>182182</p>
<p>Thank you for your letter of 14 September 2015, responding to the Proportionate Review Sub-Committee's request for changes to the documentation for the above study.</p>	
<p>The revised documentation has been reviewed and approved by the sub-committee.</p>	
<p>We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this favourable opinion letter. The expectation is that this information will be published for all studies that receive an ethical opinion but should you wish to provide a substitute contact point, wish to make a request to defer, or require further information, please contact the Assistant Co-ordinator, Mrs Diane Leonard, eosres.tayside@nhs.net. Under very limited circumstances (e.g. for student research which has received an unfavourable opinion), it may be possible to grant an exemption to the publication of the study.</p>	
<p>Confirmation of ethical opinion</p>	
<p>On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.</p>	
<p>Conditions of the favourable opinion</p>	
<p>The favourable opinion is subject to the following conditions being met prior to the start of the study.</p>	
	
1	

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at <http://www.rdforum.nhs.uk>.

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations.

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database. This should be before the first participant is recruited but no later than 6 weeks after recruitment of the first participant.

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g. when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non-clinical trials this is not currently mandatory.

If a sponsor wishes to request a deferral for study registration within the required timeframe, they should contact hra.studyregistration@nhs.net. The expectation is that all clinical trials will be registered, however, in exceptional circumstances non registration may be permissible with prior agreement from the HRA. Guidance on where to register is provided on the HRA website.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

Ethical review of research sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" above).

Approved documents

The documents reviewed and approved by the Committee are:

Document	Version	Date
Copies of advertisement materials for research participants [Study advertisement poster]	1	31 July 2015
Covering letter on headed paper [Cover letter]	1	31 July 2015



Document	Version	Date
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance policy]		14 July 2015
Interview schedules or topic guides for participants [Qualitative interview schedule]	1	31 July 2015
IRAS Checklist XML [Checklist_01092015]		01 September 2015
IRAS Checklist XML [Checklist_15092015]		15 September 2015
Letters of invitation to participant [participant invitation letter (for research register participants)]	1	31 July 2015
Letters of invitation to participant [Participant invitation letter (for Everyone Included participants)]	1	31 July 2015
Letters of invitation to participant [Participant invitation email (qualitative study)]	1	31 July 2015
Non-validated questionnaire [SCQ social cognitions (beliefs)]		
Other [Evidence of sponsors liability insurance certificate]		
Other [Cover letter - response to review]	1	14 September 2015
Participant consent form [consent form (qualitative study, online consent form)]	1	31 July 2015
Participant consent form [consent form (qualitative study)]	2	14 September 2015
Participant information sheet (PIS) [Information sheet (quantitative study, hard copy)]	2	14 September 2015
Participant information sheet (PIS) [Information sheet (quantitative study, online version)]	2	14 September 2015
Participant information sheet (PIS) [Information sheet (qualitative study)]	2	14 September 2015
REC Application Form [REC_Form_01092015]		01 September 2015
Research protocol or project proposal [Study protocol]	1	31 July 2015
Summary CV for Chief Investigator (CI) [CV (chief investigator)]	1	31 July 2015
Summary CV for supervisor (student research) [CV (primary supervisor)]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Protocol flowchart]	1	31 July 2015
Validated questionnaire [BAARS current ADHD symptoms (self report)]	1	31 July 2015
Validated questionnaire [BAARS childhood ADHD symptoms (self report)]	1	31 July 2015
Validated questionnaire [LSAS social anxiety questionnaire]	1	31 July 2015
Validated questionnaire [SCQ social cognitions (beliefs)]	1	31 July 2015
Validated questionnaire [SBQ social behaviours]	1	31 July 2015
Validated questionnaire [WEMWBS wellbeing questionnaire]	1	31 July 2015
Validated questionnaire [WFIRS functional impairment scale]	1	31 July 2015

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.



After ethical review

Reporting requirements

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- ☐ Notifying substantial amendments
- ☐ Adding new sites and investigators
- ☐ Notification of serious breaches of the protocol
- ☐ Progress and safety reports
- ☐ Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

Feedback

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website:

<http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance>

We are pleased to welcome researchers and R & D staff at our NRES committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

15/ES/0154

Please quote this number on all correspondence

Yours sincerely



**for Dr Carol MacMillan
Chair**

E-mail: ecosres.tayside@nhs.net

Enclosures: "After ethical review – guidance for researchers"

Copy to: Professor Jonathan Knight, Avon and Wiltshire Mental Health Partnership Trust R&D



2. University of Bath Psychology Ethics Committee

From: **psychology-ethics** psychology-ethics@bath.ac.uk
Subject: Ethics 15-206
Date: 8 October 2015 12:02
To: **Andrew Merwood** A.Merwood@bath.ac.uk



Dear Andrew Merwood

Reference Number 15-206: Social anxiety among adults with ADHD: a result of cognitive bias?

The ethics committee have considered your ethics proposal for the study above and have given it full ethical approval.

Best wishes with your research,

Dr Michael J Proulx
Chair, Psychology Research Ethics Committee

3. AWP R&D Approval

Page 1/3

Our Reference: AWP 914

Dr Andrew Merwood
Clinical Psychology Research and Training
Department of Psychology
University of Bath
BA2 2BQ

Hannah Antoniadou
Research and Development
Avon & Wiltshire Mental Health Partnership NHS Trust
Fromeside
Blackberry Hill Hospital
Manor Road
Fishponds
Bristol
BS16 1EG
0117 378 4267

9th October 2015

hannah.antoniadou@nhs.net

Dear Dr Merwood,

Title of study: Social anxiety among adults with ADHD: A result of cognitive bias?
Approval date: 09 October 2015
End date: 18 October 2016

Thank you very much for applying to undertake your research in AWP, we pride ourselves on a straight forward and rapid process for research governance and project management.

We are pleased to advise that we have been able to grant R&D Permission at Avon and Wiltshire Mental Health Partnership NHS Trust ("the Trust").

We also require you to document any study activity on RiO for the relevant patient records. *Please refer to the attached document for guidance.*

We now use EDGE (a Clinical Management System) to manage our research studies. As part of your approval you will be issued with an account and guide and will be expected to upload AWP recruitment figures regularly. This is a requirement from 01 April 2014 for all research recruiting in the Trust. Failure to comply with this will result in your research being suspended, so please make sure you complete this on a monthly basis.

The R&D Permission in the Trust is valid until 18th October 2016. If you require any extension to this in the future please contact us to arrange.

The documentation listed below has been received and all the relevant governance checks have now been completed.

I am therefore happy to provide R&D Permission for the above study across all locations within the Trust parameters.

Document	Version	Date
Notice of Minor Amendment	AM01	02 October 2015
Other [Debrief Sheet Qualitative]	1	31 July 2015
Other [Debrief Sheet Quantitative]	1	31 July 2015
Other [Sponsor Confirmation]	1	01 October 2015
Copies of advertisement materials for research participants [Study advertisement poster]	1	31 July 2015

Continued...

Chair
Anthony Gallagher

Headquarters
Jenner House, Langley Park, Chippenham. SN15 1GG

Chief Executive
Iain Tulley

Covering letter on headed paper [Cover letter]	1	31 July 2015
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Indemnity Insurance policy]		14 July 2015
Interview schedules or topic guides for participants [Qualitative interview schedule]	1	31 July 2015
Letters of invitation to participant [participant invitation letter (for research register participants)]	1	31 July 2015
Letters of invitation to participant [Participant invitation letter (for Everyone Included participants)]	1	31 July 2015
Letters of invitation to participant [Participant invitation email (qualitative study)]	1	31 July 2015
Non-validated questionnaire [SCQ social cognitions (beliefs)]		
Other [Evidence of sponsors liability insurance certificate]		
Other [Cover letter - response to review]	1	14 September 2015
Participant consent form [consent form (qualitative study, online consent form)]	1	31 July 2015
Participant consent form [consent form (qualitative study)]	2	14 September 2015
Participant information sheet (PIS) [Information sheet (quantitative study, hard copy)]	2	14 September 2015
Participant information sheet (PIS) [Information sheet (quantitative study, online version)]	2	14 September 2015
Participant information sheet (PIS) [Information sheet (qualitative study)]	2	14 September 2015
REC Application Form [REC_Form_01092015]		01 September 2015
Research protocol or project proposal [Study protocol]	1	31 July 2015
Summary CV for Chief Investigator (CI) [CV (chief investigator)]	1	31 July 2015
Summary CV for supervisor (student research) [CV (primary supervisor)]		
Summary, synopsis or diagram (flowchart) of protocol in non technical language [Protocol flowchart]	1	31 July 2015
Validated questionnaire [BAARS current ADHD symptoms (self report)]	1	31 July 2015
Validated questionnaire [BAARS childhood ADHD symptoms (self report)]	1	31 July 2015
Validated questionnaire [LSAS social anxiety questionnaire]	1	31 July 2015
Validated questionnaire [SCQ social cognitions (beliefs)]	1	31 July 2015
Validated questionnaire [SBQ social behaviours]	1	31 July 2015
Validated questionnaire [WEMWBS wellbeing questionnaire]	1	31 July 2015
Validated questionnaire [WFIRS functional impairment scale]	1	31 July 2015

Please be aware that if there are any amendments to the above documents they must be sent to Hannah Antoniades, Research and Development Operations Manager for permission prior to use within the Trust.

You are reminded that you must report any adverse event or incident whether or not you feel it is serious, quoting the study reference number. This requirement is in addition to informing the Chairman of the relevant Research Ethics Committee. You are also required to submit to the Research and Development Operations Manager (Hannah Antoniades) a final outcome report on completion of your study, and if necessary to provide interim annual reports on progress. Should publications arise, please also send copies to Hannah Antoniades for inclusion in the study's site file.

You must also abide by the research and information governance requirements for any research conducted within the NHS:

- Work must be carried out in line with the Research Governance Framework which details the responsibilities of everyone involved in research.

- You must comply with the Data Protection Act 1998 and where required, have up to date Data Protection Registration with the Information Commissioners Office. Where staff are employed, this includes having robust contracts of employment in place and ensuring that staff are made aware of their obligations through training and similar initiatives.
- You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice:
(http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4069253)
- You must have appropriate policies and procedures in place covering the security, storage, transfer and disposal of information both personal and sensitive, or corporate sensitive information. Any information security breach must be reported immediately to the Trust.
- Where access is granted to sensitive corporate information, this must not be further disclosed without the explicit consent of the Trust unless there is an override required by law. Where disclosure is required under the Freedom of Information Act 2000, the Trust will assist you in processing the request.

Please note that, as a public authority, the Trust is obligated to comply with the provisions of the Freedom of Information Act 2000, including the potential disclosure of information held by the Trust in connection with this study. Where a request for potential disclosure of personal, corporate sensitive, or contract information is made under the Freedom of Information Act 2000, due regard shall be made to any duty of confidentiality or commercial interest.

Yours sincerely



Hannah Antoniadou
Research & Development Operations Manager
Avon and Wiltshire Mental Health Partnership NHS Trust

CC: *Dr Amy Watts, AWP Local Collaborator*
Dr Ailsa Russell, Academic Supervisor

4. NHFT R&D Approval

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Northamptonshire Healthcare 
NHS Foundation Trust

Research and Development

Carey Block
ST Mary's hospital Kettering,
Northamptonshire
NN15 6XR

Direct Dial: (01536) 452303

Medical Director: Dr Alex O'Neill-Kerr

Head of R&D: Sue Palmer-Hill

R&D Manager: Leanne Holman

21st October 2015

Dr Andrew Merwood
Clinical Psychologist in Training
University of Bath
Clinical Psychology Research and Training, Department of
Psychology
University of Bath
Bath, BA2 7AY
Dear Dr Merwood

I am pleased to confirm that with effect from the date of this letter, the above study now has Trust Research & Development permission. You can now commence your research activities in Northamptonshire Healthcare NHS Foundation Trust in accordance to the agreed protocol and the Research Governance Framework.

Title	Social anxiety in adults with ADHD: A result of cognitive bias?	
REC Ref:	15/ES/0154	NHFT Ref: 182182
Start date	21/10/15	End date: 07/03/16

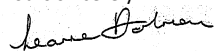
The Department of Health through East Midlands Clinical Research Network expects you to consent the first research participant within 70 days from the date of valid application submission. Please provide us with the date of the first participant recruited in due course.

As part of our monitoring requirements you are required to submit a six months progress report to the R&D Office and to the Research Ethics Committee from the start date. We ask you for a summary report of your study findings upon completion of your research as we would like to disseminate in within the Trust.

If you have any questions regarding this, or other research you wish to undertake in the Trust, please contact this office. We wish you every success with your research.

Please be aware that any changes after approval may constitute an amendment. The process of approval for amendments should be followed. Failure to do so may invalidate the approval of the study at this trust

Yours sincerely



Leanne Holman

Research and Development Manager

Approved documents received:

Document	Version	Date
REC favourable opinion		15 September 2015
Study advertisement poster	1	31 July 2015
Indemnity Insurance policy		14 July 2015
Qualitative interview schedule1	1	31 July 2015
Participant invitation letter (for research register participants)	1	31 July 2015
Participant invitation letter (for Everyone Included participants)]	1	31 July 2015
Participant invitation email (qualitative study)]	1	31 July 2015
Non-validated questionnaire SCQ social cognitions (beliefs)		
Consent form (qualitative study online consent form)	1	31 July 2015
Consent form (qualitative study)	2	14 September 2015
Information sheet (quantitative study, hard copy)	2	14 September 2015
Information sheet (quantitative study, online version)	2	14 September 2015
Information sheet (qualitative study)	2	14 September 2015
Study protocol	1	31 July 2015
CV (chief investigator)	1	31 July 2015
Summary CV for supervisor (student research) [CV (primary supervisor)]		
Protocol flowchart	1	31 July 2015
Validated questionnaire [BAARS current ADHD symptoms (self report)]	1	31 July 2015
Validated questionnaire [BAARS childhood ADHD symptoms (self report)]	1	31 July 2015
Validated questionnaire [LSAS social anxiety questionnaire]	1	31 July 2015
Validated questionnaire [SCQ social cognitions (beliefs)]	1	31 July 2015
Validated questionnaire [SBQ social behaviours]	1	31 July 2015
Validated questionnaire [WEMWBS wellbeing questionnaire]	1	31 July 2015
Validated questionnaire [WFIRS functional impairment scale]	1	31 July 2015

Please note that some of the documents may not apply to your study.

5. SLAM R&D Approval

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Institute of
Psychiatry,
Psychology &
Neuroscience

Research and
Development
Office

Box P005
De Crespigny Park
Denmark Hill
London SE5 8AF
Tel +44 (0)20 7848 0790
Fax +44(0)20 7848 0147
<http://www.kcl.ac.uk/ioppn/research/office/index.aspx>



Dr Andrew Merwood
University of Bath
Clinical Psychology Research and Training
Department of Psychology
University of Bath
Bath BA2 7AY

30th October 2015

Dear Dr Merwood,

Trust Approval: R&D2015/091

Title: Social anxiety in adults with ADHD: A result of cognitive bias? (Social Anxiety and adult ADHD)

REC Reference: 15/ES/0154

I am writing to confirm that there is no objection to South London and Maudsley NHS Foundation Trust acting as a Participant Identification Centre (PIC) for the above study.

The role of South London and Maudsley NHS Foundation Trust will be restricted to identifying potential participants from the Behavioural and Developmental Psychiatry CAG and referring them to the research team based in another organisation, for assessment and possible recruitment into the study. No participant-related research procedures specified in the protocol, including recruitment and informed consent, should be conducted within the trust, and the trust does not take on the duty of care for patients in relation to the research. This responsibility will be retained by the external research site.

Approval is conditional on the understanding that the research will adhere to current and relevant statutory guidance and legislation.

If you wish to discuss any aspect of this approval with the R&D Office, please contact Jenny Liebscher jennifer.liebscher@kcl.ac.uk in the first instance.

I wish you every success with this study.

Yours sincerely

Adriana Fanigliulo
Research Governance Facilitator
SLaM/IoPPN R&D Office

South London and Maudsley NHS
NHS Foundation Trust

APPENDIX M: Main Research Project - Sampling and power analysis

An *a-priori* power calculation was conducted to determine the requisite sample size for the intended group comparisons. To date no studies have directly compared adults with ADHD and without ADHD, who score high vs. low for social anxiety, for negative cognitions. However, one recent study did examine the occurrence of negative automatic thoughts (NATs) among healthy controls ($n=43$) and adults with ADHD with ($n=34$) versus without ($n=47$) depression (Mitchell et al., 2013). This study found significant between-group differences when comparing the three groups for the presence of NATs, with a large effect size (Cohen's $f = 0.61$) for the main analysis (ANOVA). Data from Mitchell et al. (2013) were therefore used to inform a power calculation for the present research proposal (see Appendix C). Power analyses were conducted using *G*Power* (Faul et al., 2009).

To detect an equivalent large effect ($f = 0.61$) in univariate ANOVA, with 82% power and $\alpha < 0.05$, a total sample of $N=30$ is required, corresponding to three equal groups of $n=10$. To detect an equivalent effect when comparing four groups, with 84% power and $\alpha < 0.05$, a total sample of $N=36$ is required, corresponding to four equal groups of $n=9$. However, because the previous study found a very large effect and used a different outcome measure to the measures proposed for this study, it is plausible that a smaller effect will be present in this study. Power calculations were therefore repeated to determine the necessary sample size to detect small, medium and large effects (based on Cohen's f) for three or four group comparisons, summarised in Table M1.

Table M1. A-priori power calculations

Effect size (f)	Description	Power	Required N (3 groups)	Required N (4 groups)
0.10	Small	0.80	969	1096
0.25	Medium	0.80	159	180
0.40	Large	0.80	66	76

Note: Power calculations completed using *G*Power*; effect size = Cohen's f , where $f \geq 0.10$ = small, $f \geq 0.25$ = medium, and $f \geq 0.40$ = large

On the basis of these calculations, it was intended to power this study to detect a medium-sized effect. This required a sample size of $N=159$ corresponding to three

equal groups of $n=53$, or $N=180$ corresponding to four equal groups of 45. Because this study used a convenience sampling strategy, it was not clear how many of the adults with and without ADHD would meet criteria for a social anxiety problem. Accordingly, the intention was to recruit a sufficient sample as to have power to detect a medium effect size across three groups: adults with ADHD and social anxiety (ADHD+SA), adults with ADHD without social anxiety (ADHD-SA), and controls without social anxiety (Control-SA). This design most closely matched the study by Mitchell et al (2013), on which the power calculations were based. Based on epidemiological research (Kessler et al., 2006) it was anticipated that around 30% of adults with ADHD would meet criteria for social anxiety. A sample size of $n=159$ adults with ADHD was therefore sought to allow for a sufficient number of adults in the ADHD+SA group (estimated $n=53$) and a larger number of adults in the ADHD-SA group (estimated $n = 106$). A minimum control sample of $n=53$ was sought, although the intention was to recruit more controls where possible such that a group of controls with social anxiety (Control+SA) might be identified. Unequal group sizes as a result of this sampling method were to be controlled for in statistical analyses.

A *post-hoc* extension of the power calculations was completed after data collection and analysis, to compute the achieved power in this study. The main analyses were performed as robust regressions in Stata, with four predictor variables (gender, age, group contrast 1 & group contrast 2; or gender, age, lifetime inattention & lifetime hyperactivity/impulsivity). Post-hoc analyses indicated 97-100% power to detect the medium-large effects found in this study (see Table M2).

Table M2. *Post-hoc* power calculations

Analysis	α	Effect size (f^2)	Description	Power
<i>Group comparisons (N=81)</i>				
SCQ - F	0.05	1.33	Large	1.00
SCQ - B	0.05	0.75	Large	1.00
SBQ	0.05	0.96	Large	1.00
WEMWBS	0.05	0.39	Large	1.00
WFIRS	0.05	1.78	Large	1.00
<i>Linear regressions (N=86)</i>				
SCQ - F	0.05	0.43	Large	1.00
SBQ	0.05	0.25	Medium	0.97

Note: Power calculations completed using *G*Power*; effect size = Cohen's f^2 , where $f^2 \geq 0.02$ = small, $f^2 \geq 0.15$ = medium, and $f^2 \geq 0.35$ = large; SCQ = Social Cognitions Questionnaire - Frequency

(F) or Belief (B) scales; SBQ = Social Behaviours Questionnaire; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; WFIRS = Weiss Functional Impairment Rating Scale.

APPENDIX N: Main Research Project - Internal consistencies

Table N.1. Internal consistency of the measures used in main research

Measure	Chronbach's α	
	Adults with ADHD (N=)	Adults without ADHD (N=)
BAARS Adult - IA	0.85	0.81
BAARS Adult - HI	0.73	0.77
BAARS Child - IA	0.92	0.82
BAARS Child - HI	0.90	0.81
LSAS	0.97	0.97
SCQ - Frequency	0.92	0.93
SCQ - Belief	0.93	0.95
SBQ	0.91	0.91
WEMWBS	0.90	0.92
WFIRS	0.98	0.90

Note: BAARS = Barkley Adult ADHD Rating Scale; IA = inattentive symptoms; HI = hyperactive/impulsive symptoms; LSAS = Liebowitz Social Anxiety Scale; SCQ = Social Cognitions Questionnaire; SBQ = Social Behaviours Questionnaire; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; WFIRS = Weiss Functional Impairment Rating Scale; internal consistency judged as acceptable if $\alpha \geq 0.70 < 0.80$, good if $\alpha \geq 0.80 < 0.90$, excellent if $\alpha \geq 0.90$.

Appendix O: Main Research Project - Statistical analysis

All analyses were conducted using SPSS version 20 (IBM Corp., 2011) and Stata version 13 (StataCorp, 2013).

Missing data strategy:

Prior to undertaking analyses, missing data were controlled for in two ways: First, for individual participants missing data for a single item per scale, mode substitution was used (Field, 2009). Second, individual participants with missing data across multiple items per scale were excluded from analyses. This approach was chosen since visual inspection of the data suggested a missing at random pattern and only very few participants (n=8) were excluded as a result of this approach (Tabachnik & Fidell, 2005).

Properties of the data:

A number of variables were non-normally distributed and/or showed evidence of heterogeneity of variances (Appendix O). Data transformation resulted in only marginal improvements in the distributions of these variables and data did not meet the assumptions for non-parametric alternatives to ANCOVA (e.g. Rank Analysis of Covariance; Quade, 1967). Therefore, the main analyses were performed on untransformed data using general linear models, implemented as regressions with robust standard errors in Stata (see Table O.1., below). This procedure uses Huber-White Sandwich estimators to generate standard errors robust to deviations from normality, outliers, and heteroscedasticity (Acock, 2012; Williams, 2000), allowing untransformed data to be used even where there were deviations from normality and/or heterogeneity of variances across groups. After completion of model-fitting, a detailed examination of residuals indicated some atypical distributions of residuals for the models fit to data (Residual vs. Fitted plots are presented in Figures O.1 to O.7, below). Possible outliers were identified and examined; however all scores were found to be within the appropriate range for the respective scales and were therefore not excluded from analyses. Overall, these findings justify the use of regressions with robust standard errors.

Table O.1. Tests of normality and variances for continuous variables by group.

Variable	CONTROL (N=22)						SAD (N=36)						ADHD+SAD (N=23)						Levene's test (Raw)	Levene's test (Transformed)
	Raw			Transformed			Raw			Transformed			Raw			Transformed				
	Skew.	Kurt.	Skew.	Kurt.	Skew.	Kurt.	Skew.	Kurt.	Skew.	Kurt.	Skew.	Kurt.	Skew.	Kurt.	Skew.	Kurt.				
Age	1.54	2.67	1.24	1.25	2.92	8.79	2.53	6.60	-0.94	-0.71	-0.37	-0.51	-0.94	-0.71	-0.37	-0.51	F=1.89, p=.158	F=0.79, p=.459		
BAARS - A - IA	0.72	-0.40	-0.35	0.53	0.98	0.73	-0.40	-0.32	-0.89	0.51	-1.28	1.77	-0.89	0.51	-1.28	1.77	F=2.74, p=.071	F=3.69, p=.029		
BAARS - A - HI	0.47	-0.93	-0.41	-0.54	1.55	3.50	-0.13	0.57	0.05	-1.08	-0.18	0.88	0.05	-1.08	-0.18	0.88	F=3.04, p=.053	F=1.68, p=.193		
BAARS - C - IA	1.17	0.85	0.03	-1.00	0.45	-0.96	-0.34	-1.29	-1.23	1.54	-2.24	6.40	-1.23	1.54	-2.24	6.40	F=12.39, p<.001	F=1.83, p=.166		
BAARS - C - HI	2.15	6.38	0.06	0.52	0.91	0.14	-0.15	0.90	-0.27	-0.88	-0.80	0.14	-0.27	-0.88	-0.80	0.14	F=11.91, p<.001	F=0.75, p=.476		
BAARS - L - IA	0.74	-0.44	0.24	-0.66	0.77	0.01	-0.36	-0.17	-1.02	2.01	-1.57	4.10	-1.02	2.01	-1.57	4.10	F=4.56, p=.013	F=5.93, p=.004		
BAARS - L - HI	1.37	2.36	0.00	0.57	0.88	0.23	-0.21	-0.14	-0.09	-1.02	-0.33	-0.85	-0.09	-1.02	-0.33	-0.85	F=4.99, p=.009	F=1.04, p=.359		
LSAS	-0.85	-0.21	-1.33	1.10	1.01	0.62	0.68	0.02	0.35	-0.73	0.08	-0.87	0.35	-0.73	0.08	-0.87	F=10.36, p<.001	F=1.53, p=.222		
SCQ - F	0.71	-0.04	0.46	-0.51	0.47	-0.08	0.20	-0.28	-0.23	-0.80	-0.39	-0.71	-0.23	-0.80	-0.39	-0.71	F=0.49, p=.614	F=0.18, p=.839		
SCQ - B	2.01	6.25	1.22	2.37	0.47	-0.54	0.12	-0.72	0.08	-0.82	-0.20	-0.67	0.08	-0.82	-0.20	-0.67	F=1.20, p=.307	F=0.36, p=.669		
SBQ	0.46	-0.93	0.03	-0.98	-0.22	-0.44	-0.74	0.56	-0.08	0.04	-0.46	0.25	-0.08	0.04	-0.46	0.25	F=0.23, p=.796	F=1.76, p=.180		
WEMWBS	-0.81	-0.14	-0.97	0.28	-0.23	-0.42	-0.44	-0.38	-0.30	-0.45	-0.58	0.07	-0.30	-0.45	-0.58	0.07	F=0.23, p=.799	F=0.43, p=.653		
WFIRS	0.46	-1.16	-0.11	-1.01	0.86	-0.07	0.28	-0.73	1.00	1.52	0.56	0.74	1.00	1.52	0.56	0.74	F=3.79, p=.027	F=4.10, p=.020		

Note: Table presents properties of raw and transformed data; all transformations were the Square-root of the raw data selected as the best transformation according to the G-Ladder procedure in Stata; approximately normal distributions are indicated by skewness (skew.) and kurtosis (kurt.) values of 0±1; homogeneity of variances is indicated by a Levene's test where $p>.05$; BAARS = Barkley Adult ADHD Rating Scale - adult version (A), child version (C) or lifetime composite (L), for either inattentive (IA) or hyperactive/impulsive (HI) symptoms; LSAS = Liebowitz Social Anxiety Scale; SCQ = Social Cognitions Questionnaire - Frequency (F) or Belief (B) scales; SBQ = Social Behaviours Questionnaire; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; WFIRS = Weiss Functional Impairment Rating Scale.

Figure O.1. Residual vs. Fitted plot for prediction of SCQ - Frequency score by gender, age and group

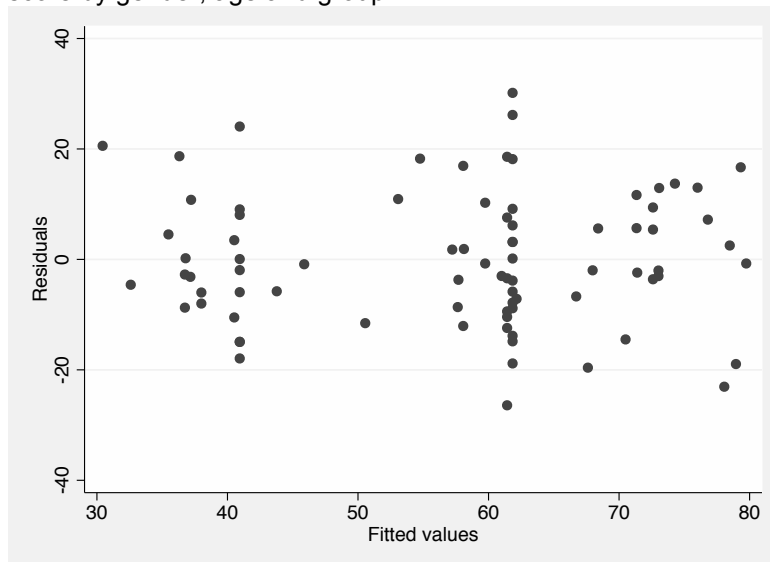


Figure O.2. Residual vs. Fitted plot for prediction of SCQ - Belief score by gender, age and group

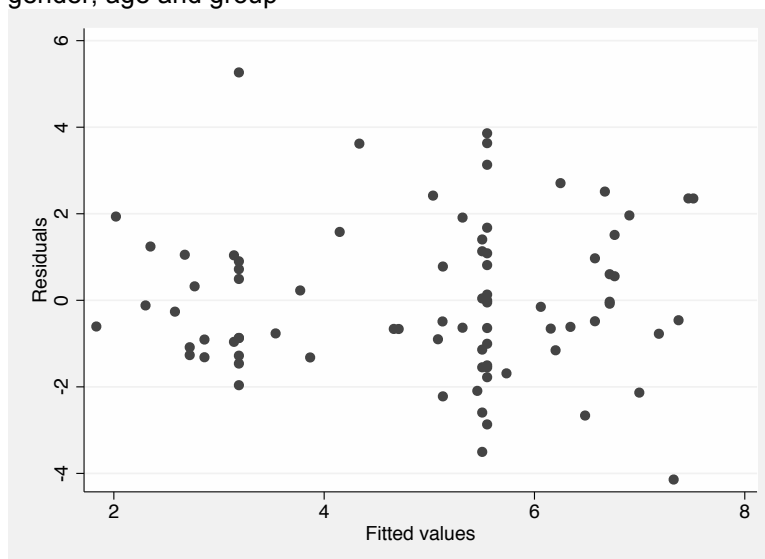


Figure O.3. Residual vs. Fitted plot for prediction of SBQ - Total score by gender, age and group

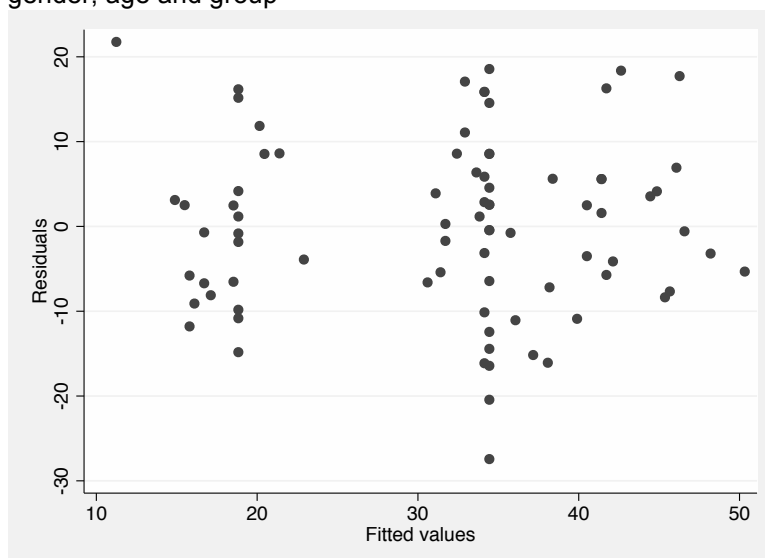


Figure O.4. Residual vs. Fitted plot for prediction of WEMWBS - Total score by gender, age and group

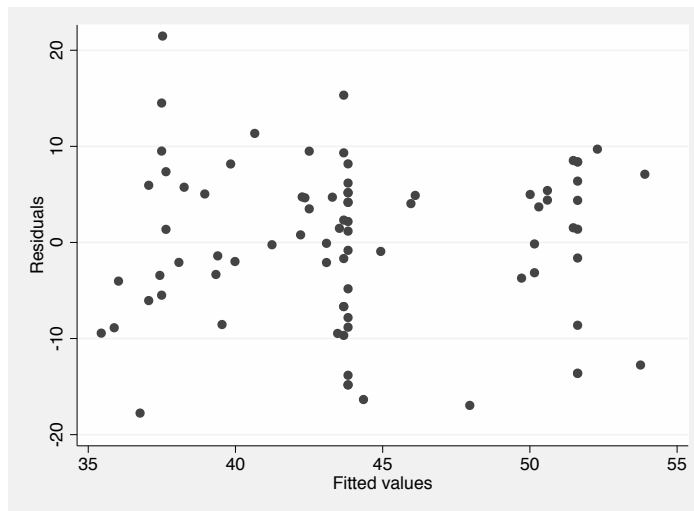


Figure O.5. Residual vs. Fitted plot for prediction of WFIRS - Total score by gender, age and group

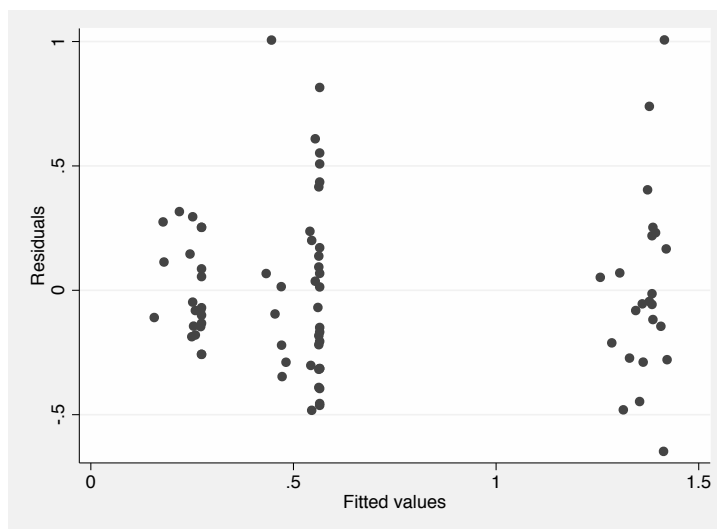


Figure O.6. Residual vs. Fitted plot for prediction of SCQ - Frequency score by gender, age and lifetime ADHD symptoms

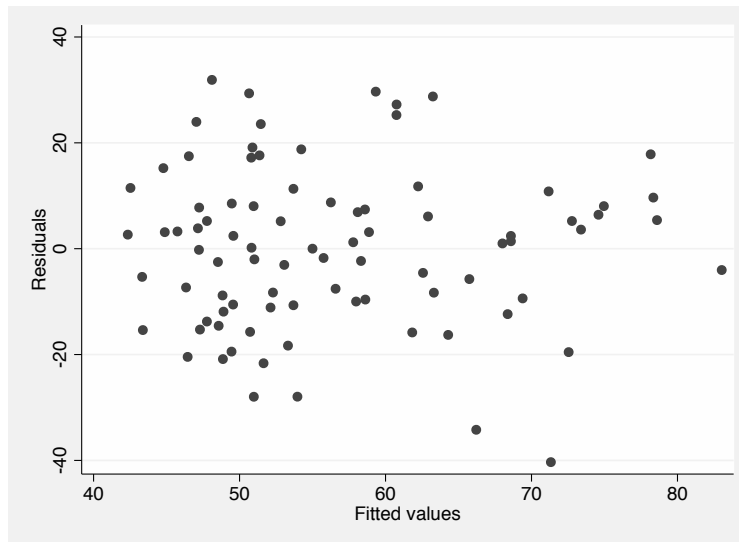
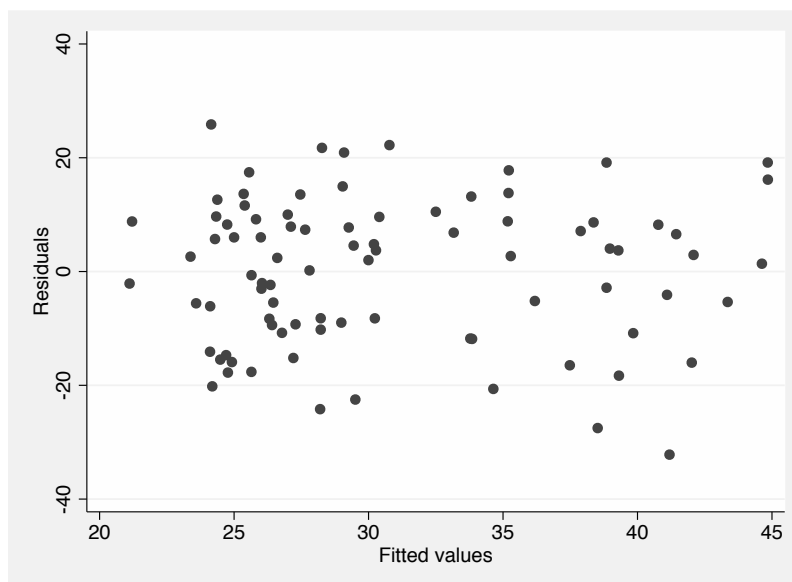


Figure O.7. Residual vs. Fitted plot for prediction of SBQ - Total score by gender, age and lifetime ADHD symptoms



General linear modelling to test hypotheses 1-2:

To test hypotheses 1-2, group status was incorporated into the general linear models using two weighted dummy variables in accordance with Field (2009), which allowed planned contrasts to be made: The first dummy variable was weighted to compare the Control-SA group with the Control+SA and ADHD+SA groups, to test the hypothesis that those classified as high in social anxiety would score higher for social anxiety cognitions and behaviours, lower for wellbeing and higher for impairment; the second dummy variable was weighted to compare the Control+SA and ADHD+SA groups, to test the hypothesis that those with ADHD

and high social anxiety would score highest for social anxiety cognitions and behaviours, lowest for wellbeing and highest for impairment. Gender and age were included as covariates.

General linear modelling to test hypothesis 3:

General linear models were used to predict SCQ Frequency scores and SBQ Total scores by lifetime ADHD symptoms, while controlling for gender and age. There were high correlations between the social anxiety variables (see Table O.2, below) and for this reason SCQ Frequency and SBQ Total scores were selected as representative dependent variables for these analyses. SCQ Frequency was selected due to its degree of correlation with the ADHD symptom variables, while SBQ was selected as it captures behaviours as opposed to cognitions. Table O.2 also indicates that ADHD symptom variables were highly correlated and it was for this reason that the lifetime ADHD composites were created for the domains of inattention (IA) and hyperactivity-impulsivity (HI). Multicollinearity was assessed using the Variance Inflation Factor (VIF) statistic, which was <10 for all variables incorporated into the regression models, indicating no problems of multicollinearity (Acock, 2012).

References cited in Appendix O:

- Acock, A. C. (2012). *A gentle introduction to Stata (Revised 3rd Edition)* (2 ed.). Texas: Stata Press.
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- Quade, D. (1967). Rank analysis of covariance. *Journal of the American Statistical Association*, 62, 1187-1200.
- StataCorp. (2013). *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP.
- Tabachnik, B. G., & Fidell, L. S. (2005). *Using Multivariate Statistics (5th edition)*, Harlow, Pearson.

Table O.2. Correlation matrix for regressions

	BAARS - A - IA	BAARS - A - HI	BAARS - C - IA	BAARS - C - HI	LSAS	SCQ - F	SCQ - F
BAARS - A - HI	0.86	-	-	-	-	-	-
BAARS - C - IA	0.79	0.79	-	-	-	-	-
BAARS - C - HI	0.67	0.79	0.89	-	-	-	-
LSAS	0.49	0.39	0.46	0.40	-	-	-
SCQ - F	0.50	0.42	0.47	0.36	0.77	-	-
SCQ - B	0.48	0.40	0.45	0.38	0.67	0.88	-
SBQ	0.41	0.41	0.41	0.34	0.68	0.75	0.68

APPENDIX P: Main Research Project - Rank-ordered lists of cognitions and behaviours

Table Q.1. Rank-ordered list of social anxiety cognitions endorsed by adults with ADHD who scored high for social anxiety (ADHD+SA)

Thought	Accumulated score
I am inadequate	97
I am weird/different	97
People will reject me	96
I will babble/ talk funny	92
I will be unable to concentrate	92
People won't like me	92
People will see I'm nervous	90
I am inferior	83
People are not interested in me	83
I am vulnerable	83
People think I'm boring	82
People will stare at me	80
I am unlikable	79
I am foolish	79
I will drop/spill things	69
I will sweat/perspire	66
I am going red	63
I will be unable to write	62
I will be unable to speak	54
I will shake uncontrollably	52
I will be paralysed with fear	48
I am going to be sick	37

Note: All thoughts represent individual items on the SCQ; Accumulated score was calculated by summing the scores of all participants for each item (e.g., for '*I am inadequate*' the accumulated score is the sum of all individual participants' scores for that item of the questionnaire); the possible range of scores using this method is 22-115.

Table Q.2. Rank-ordered list of social anxiety behaviours endorsed by adults with ADHD who scored high for social anxiety (ADHD+SA)

Safety-seeking behaviour	Accumulated score
Make an effort to come across well	54
Try to act normal	49
Make an effort to get your words right	48
Try to keep tight control of your behaviour	48
Try to picture how you appear to others	45
Stay on the edge of groups	45
Rehearse sentences in your mind	44
Blank out or switch off mentally	44
Check that you are coming across well	43
Talk more	42
Try not to attract attention	39
Try to think about other things	36
Avoid eye contact	35
Talk less	35
Ask lots of questions	35
Avoid pauses in speech	35
Grip cups or glasses tightly	34
Censor what you are going to say	34
Position yourself so as not to be noticed	31
Avoid asking questions	29
Avoid talking about yourself	29
Choose clothes that will prevent/conceal sweating	28
Try to control shaking	26
Use alcohol to manage anxiety	23
Keep still	22
Think positive	22
Hide your face	18
Wear clothes or makeup to hide blushing	10

Note: All thoughts represent individual items on the SCQ; Accumulated score was calculated by summing the scores of all participants for each item (e.g., for '*Make an effort to come across well*' the accumulated score is the sum of all individual participants' scores for that item of the questionnaire); the possible range of scores using this method is 0-69.